

For Reference

NOT TO BE TAKEN FROM THIS ROOM

Ex libris
UNIVERSITATIS
ALBERTAENSIS





Digitized by the Internet Archive
in 2023 with funding from
University of Alberta Library

<https://archive.org/details/Patternson1972>

THE UNIVERSITY OF ALBERTA

TOWARDS AN ANALYSIS OF INTERROGATIVES:

EVIDENCE FROM FRENCH AND ENGLISH

by



GEORGE W. PATTERSON

A THESIS

SUBMITTED TO THE FACULTY OF GRADUATE STUDIES AND RESEARCH

IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE DEGREE

OF DOCTOR OF PHILOSOPHY

DEPARTMENT OF ROMANCE LANGUAGES

EDMONTON, ALBERTA

FALL, 1972

Thesis
72F-84D

UNIVERSITY OF ALBERTA
FACULTY OF GRADUATE STUDIES AND RESEARCH

The undersigned certify that they have read,
and recommend to the Faculty of Graduate Studies and Research
for acceptance, a thesis entitled

TOWARDS AN ANALYSIS OF INTERROGATIVES:

EVIDENCE FROM FRENCH AND ENGLISH

submitted by

GEORGE W. PATTERSON

in partial fulfilment of the requirements for the degree of
Doctor of Philosophy.

To Janice

Rhonda

Regan

Lance

ABSTRACT

Recent tranformational-generative analyses of interrogative structures are examined in the light of evidence from French and English. These analyses provide, in one form or another, a marker in the underlying representations for sentence types such as declarative, interrogative, imperative, which triggers the operation of certain transformations. Interrogative structures additionally require a device to relate the sentence-type marker to other elements in the sentence. It is generally assumed that the sentence-type marker occurs in sentence-initial position and that it dominates the sentence. The secondary device specifies the focus of the sentence marker.

Among the attempts at specifying the nature of these devices are those of Katz and Postal (1964), Langacker (1969) and Baker (1970). Analysis of these proposals shows that their individually distinctive properties are unmotivated. It is possible to provide a coherent account of French interrogative structures using the bipartite signalling device originally proposed by Katz and Postal (abbreviated as *Q* and *WH*) and an associated constraint (Katz-Postal constraint) which prevents transformations from changing meaning. Later efforts to increase the scope and kinds of information included in a syntactic grammar are shown to be inferior to the Katz-Postal analysis. In particular, abstract sentences or performatives are rejected as neither well motivated nor well formulated. At the same time, it seems clear that a considerable amount

of extralinguistic information is crucial to an account of many aspects of interrogative structures. The Katz-Postal framework allows inclusion of such information in the syntactic grammar without speculating on how this information may be structured or represented. In this respect, the analysis of French interrogatives presented here should be considered more a guideline for future research than a definitive statement.

ACKNOWLEDGEMENTS

I am grateful to the members of my examining committee, all of whom have worked under pressures of time in the final stages. Special acknowledgement goes to Gary Prideaux for providing me with a good deal of the background which went into this work.

I owe a debt to my friend and advisor, JoAnn Creore, for her patience, understanding and encouragement at every stage of the thesis. She provided a rational direction at many trying points and made its completion possible.

I have benefitted greatly from the time and patience of native speakers whose judgements have influenced every phase of the analysis. I most frequently consulted Magdy Badir, Gilles Cadrin, Vanina Katz, Ed Marxheimer, Bernard Rochet and Alicia Solomon.

The friends and colleagues who have been helpful in various ways are numerous. Among these are Francisco Cerdà, Bruce Derwing, Paul Fletcher, Richard Laurin, Chris Lyons, François Nève de Mévergnies and David Pearce. Jim and Sherry Anderson deserve particular mention for their special confidence and encouragements. Terry Gordon and Jack Walkley helped in many intangible ways. Dr. Charles Moore, June Panteluk and Philippe Laroch provided special considerations along the way.

Mrs. Roseanne Tarnowski has done an admirable job of executing the clerical work under difficult conditions.

My deepest debts are to my family for their many sacrifices. Without the faith and devotion of my wife, Janice, this thesis would never have been begun, and once begun never completed.

TABLE OF CONTENTS

	<u>Page</u>
CHAPTER I: INTRODUCTION.....	1
1.0 Orientation.....	2
1.1 Underlying structures: the Katz-Postal constraint.....	2
1.11 Meaning preservation.....	2
1.12 Recoverability.....	5
1.2 The interpretivist position.....	6
1.3 Organization.....	16
CHAPTER II: THE INTERROGATIVE MORPHEME.....	19
2.0 Introduction.....	20
2.1 Chomsky's 1957 position.....	20
2.2 Chomsky's 1962 position.....	25
2.3 Lees' early analysis.....	26
2.4 Klima's improvement.....	27
2.5 The Katz-Postal integrated <i>Q</i>	29
2.51 <i>Q</i> and <i>WH</i>	29
2.52 Proforms.....	33
2.53 Location of <i>Q</i>	39
2.54 The transformations.....	42
2.6 Kuroda: <i>WH</i> attachment.....	47
2.7 Higher sentences and <i>Q</i>	51
2.71 Sentence-type markers.....	51
2.72 Hypersentences.....	53

TABLE OF CONTENTS (cont'd)

	<u>Page</u>
2.73 Hypersentences and pronominalization.....	56
2.74 Embedded hypersentences.....	60
2.8 Embedded interrogatives.....	64
2.9 <i>Q</i> as a segment.....	68
2.10 Segmental <i>Q</i> refuted.....	73
2.11 <i>Q</i> as an index on <i>ASK</i>	82
2.12 Concluding observations.....	84
 CHAPTER III: PERFORMATIVES, INDICES AND THE INTERROGATIVE	
MORPHEME.....	85
3.0 Introduction.....	86
3.1 The complexity of performatives.....	86
3.2 Semantic considerations - internal problems....	97
3.3 The world in an arbor.....	100
3.4 A grammar without performatives.....	102
3.5 Relatives and proforms.....	104
3.6 Relatives and embedded interrogatives.....	112
3.7 Indices and interrogatives.....	137
3.8 Conclusion.....	143
 CHAPTER IV: FRENCH INTERROGATIVES: INTONATION AND YNQ.....	
4.0 Introduction.....	148
4.1 Intonation questions.....	149
4.2 Intonation questions and conjunction -	
Langacker's proposal.....	150

TABLE OF CONTENTS (cont'd)

		<u>Page</u>
4.3	Intonation questions and conjunction - Hirschbühler's proposal.....	160
4.4	Conjunction refuted.....	169
4.5	Conclusion.....	175
CHAPTER V:	FRENCH INTERROGATIVES: INVERSION.....	179
5.0	Introduction.....	180
5.1	Inversion questions.....	180
5.2	Complex inversion: the problem.....	188
5.3	A copying solution: its task.....	191
5.4	A transformational solution.....	202
5.5	Dislocation, reduplication and focus.....	205
5.6	Focus, repeated elements and underlying structures.....	217
5.7	Reduplication and complex inversion.....	222
5.8	A PS solution.....	224
5.9	Clitic conversion and 'subject' insertion.....	229
5.10	Conclusion.....	237
CHAPTER VI:	FRENCH INTERROGATIVES: <i>EST-CE QUE</i> AND <i>WH</i> QUESTIONS.....	242
6.0	Introduction.....	243
6.1	<i>Est-ce que</i> as an inversion.....	243
6.2	<i>Est-ce que</i> as a morpheme.....	247

TABLE OF CONTENTS (cont'd)

	<u>Page</u>
6.3 WH questions (WHQ).....	250
6.4 WHQ and intonation.....	251
6.5 WHQ and inversion.....	254
6.6 WHQ and <i>est-ce que</i>	255
6.7 <i>Quel</i> questions.....	261
6.8 Conclusion.....	265
CHAPTER VII: CONCLUSIONS.....	268
7.0 Conclusions and implications.....	269
7.1 Future directions.....	274
BIBLIOGRAPHY.....	277

CHAPTER I

INTRODUCTION

	<u>Page</u>
1.0 Orientation	1
1.1 Underlying structures: the Katz-Postal constraint	2
1.11 Meaning preservation	2
1.12 Recoverability	5
1.2 The interpretivist position	6
1.3 Organization	16

CHAPTER I

INTRODUCTION

1.0 Orientation

The aim of this thesis is to explore recent analyses of interrogative structures with particular reference to interrogatives in modern French. The theoretical orientation is that established by Chomsky (1957, 1965) and known as the generative-transformational model. In the main this thesis deals with two general points. It is concerned with defining what the underlying structures of questions in general must minimally contain and with how the surface structures of questions in French are derived.

1.1 Underlying structures: the Katz-Postal constraint

1.11 Meaning preservation

Katz and Postal (1962) proposed a constraint to make transformations meaning preserving. This constraint was required for a number of syntactic reasons. One was the fact that in sentences like (1) and (2) there is no apparent way to designate functional properties such as "subject of" and "object of".

- (1) a. John drank the milk.
b. The milk was drunk by John.
- (2) a. The picture was painted by a new student.
b. The picture was painted by a new technique.

That is, the derived structures of these sentences do not provide a "unique correlation between grammatical relations and configurations of constituents" (p.39) whereas underlying P-markers do provide such a correlation.

These sentences contrast with (3) and (4) where the meaning differences lie in the order relationships between the terms and not in the individual lexical items.

(3) John loves Mary.

(4) Mary loves John.

Although the order of elements from (1 a) to (1 b) and from (2 a) to (2 b) has been altered, the grammatical relationships have not. Functional meaning is specified independently of superficial ordering. Functional meaning can be consistently specified in underlying structures provided that transformations are constrained so as not to change this meaning.

Additional support for the meaning preservation constraint is found in sentence pairs like (5) and (6) where the italicized words in each pair carry identical meaning.

(5) a. He *looked up* the number.

b. He *looked* the number *up*.

(6) a. Almost all the contestants *have been chosen*.

b. The contestants *have* almost all *been chosen*.

If these items (lexical in (5) and constituent in (6)) are given a semantic reading in underlying P-markers, then no special means of equating discontinuous superficial elements is required

and the order changing transformations which derive the (b) versions from the (a) versions of (5) and (6) avoid the use of special interpretive devices on surface structures.

Deletion transformations offer additional support for the Katz-Postal constraint (KPC). Sentences like (7) have undergone a deletion transformation which has deleted the verb phrase "plays chess" after "Sydney."

(7) John plays chess as well as Sydney.

If the surface structure were the source of the semantic reading for a sentence like (7) we could assert that (7) could be paraphrased as (8).

(8) John plays chess as well as Sydney makes shoes.

Since (7) is never understood as a paraphrase of sentences like (8) but only as a shortened version of (9), the grammar must not permit derivation of (7) from (8).

(9) John plays chess as well as Sydney plays chess.

Sentences (7) and (8) therefore derive from different underlying P-markers. These P-markers can therefore be the source of the respective semantic readings of (7) and (8).

In addition to permutation and deletion, Katz and Postal argue that the addition of *do* into the derived structure of (10) as a carrier of the present tense morpheme does not violate their constraint since *do* does not alter the meaning.

(10) John does not go home.

They contend that the semantic reading of (10) is contained in (11), which, although ungrammatical as a surface structure, contains all the meaning information of (10).

(11) *John not go home.

Since (11) is an approximation of the underlying structure of (10) it is once again clear that underlying structures can provide the basis for the semantic reading of sentences.

If semantic readings are obtained from underlying P-markers, there is no need to obtain additional semantic readings from either intermediate or surface structures. Not only would such a dual reading procedure involve unnecessary duplication, it would also entail the addition of considerable *ad hoc* formal machinery, especially in cases represented by sentences (5) and (6) where the specific types of discontinuity do not follow any pattern which is predictable from surface structure. Sentence (12) substantiates this last point.

(12) Almost all the contestants *have finally been*
randomly *chosen*.

1.12 Recoverability

Accompanying the meaning preservation constraint, Katz and Postal (1964:79-84) proposed the condition that the operations of transformations be recoverable. Nonambiguous sentences derive from underlying structures which are uniquely recoverable. That is, transformations can delete, permute or insert elements only in such a way that it is possible to uniquely reverse the effect of the

transformation. It is the unique recoverability condition which makes it possible to reconstruct an underlying P-marker from a surface structure and thereby determine the semantic reading of a sentence. For example, (8) is not a paraphrase of (7) because the deletion transformation in question can only delete verb phrases which are identical to a preceding verb phrase. If it were not for this identity condition, (7) would be synonymous with any one or all of (13).

- (13) John plays chess as well as Sydney { eats.
hunts.
plays hockey. }

The implication of the meaning preservation and recoverability constraints is that all aspects of meaning are determined in the underlying structure. This conclusion has been challenged in recent literature. If the implication is challenged, then so are the constraints since if not all meaning is determined by underlying structure, then some meaning derives from the operations which produce surface structures. The transformations could not, then, be meaning preserving.

1.2 The interpretivist position

Chomsky (1969) has argued against the idea that all aspects of meaning are determined by underlying structures. He offers a number of arguments in defense of the position that some aspects of meaning are determined at the surface structure level.

There are sentences like (14) (where capitalization indicates primary stress).

- (14) a. Is it JOHN who writes poetry?
 b. It isn't JOHN who writes poetry.

A natural response to (14) can be (15).

- (15) No, it is BILL who writes poetry.

The focus of (14 a) and (14 b) is JOHN and the presupposition is "someone writes poetry." Sentence (15) has the same presupposition but replaces one focused lexical item, JOHN, by another lexical item, BILL, which is also focused. As a response to (14 b) (15) is a confirmation. If (15) is a response to (14 a) it is a correction of the focus of the question with an interpretation like (16).

- (16) No, it is not $\begin{Bmatrix} \text{John} \\ \text{JOHN} \end{Bmatrix}$ who writes poetry, it is BILL who writes poetry.

The focused element, BILL, functions in contrast to some other element, which may also be focused.

Chomsky contends that (17) cannot be a natural response to either sentence in (14).

- (17) No, John writes only SHORT STORIES.

The unnaturalness of (17) apparently stems from the fact that the presupposition of (14) is not repeated. It can however be contended that (17) is a response to (14) in a clear way. Rather than reaffirming or correcting the focus, (17) corrects the presupposition. It is possible to construct a context in which (17) is natural:

(18) Speaker 1: Do you remember John and Bill, the
writers, that you met at the party?

Speaker 2: Yes, but I can't remember which one writes
short stories and which one writes short poems.

Is it JOHN who writes poetry?

Speaker 1: No, John writes only SHORT STORIES.

(implication: someone else (viz. BILL) writes
short poems.)

Chomsky's subsequent argument is therefore weakened.

He proposes two alternatives for dealing with the focus
and presuppositions of (14): a) focus and presupposition are
derived from the deep structure; b) focus and presupposition are
determined by the phrase containing the surface intonation contour.

If the first alternative is accepted then the underlying
structures of sentences (S) have the form

$$S \rightarrow S' F P$$

Where S' consists of the categorial (syntactic) component, F stands
for focus devices and P represents presuppositions. Chomsky contends,
however, that this scheme is a notational variant¹ of a system which

¹The term "notational variant" as used by Chomsky is unclear. He states that two analyses are notational variants of each other when they do not make any different empirical claims. He then contends that a grammar which includes all aspects of meaning in its underlying structures is a notational variant of one which allows surface interpretations which are distinct from underlying interpretations. A grammar which is reflected by the schema $S \rightarrow S' F P$ seems to imply that the speaker manipulates his surface linguistic elements so that they communicate his intended (or deep structure) message. A grammar which derives F and P from the surface structure seems in contrast to imply that the speaker arrived at the actual message somewhat by accident. It is therefore difficult to see what the term notational variant can mean. In particular, it is difficult to know just what empirical claims Chomsky is making.

determines focus and presupposition from surface structures.

Part of the argument is that F and P would operate as filtering devices on elements derived from S'. These filtering devices would function so as to exclude sentences not consistent with the content of F and P. If this were the case, then Chomsky is correct in assuming that the two alternatives to dealing with F and P can be merged. However, one can just as easily argue that underlying F and P operate as triggers for specific transformations so that the derivational history of two S's which are identical in underlying structure except that they differ in some specific detail of F and/or P would be different. Support for this analysis is outlined in detail in Chapter III below.

The discourse (18) demonstrates that sentences belong to contextual frames and function in context. It also illustrates that the syntactic elements can be manipulated to express presuppositions, nuances and so on that the speaker wishes to emphasize. Chomsky explicitly denies this possibility because he feels it reflects the "'Saussurian' view that a sentence is constructed by a series of successive choices, and that each of these may be related to semantic considerations of some sort" (p.37). He views these choices as metaphorical because he is concerned about the production of sentences as a competence phenomenon, rather than as a performance factor.²

Chomsky bases his conclusions on evidence which is

²For a characterization of the competence-performance distinction see Chomsky (1965). For criticism see Hymes (1972), Leech (1968).

exclusively syntactic as in sentences (19).

- (19) a. Peter wants only to sell us out.
 b. Peter only wants to sell us out.
 c. Only Peter wants to sell us out.

The argument constructed on the basis of these data is attributed to Kuroda (1969). Since *only* can occur in any of three positions in (19) the conclusion is that the positioning of *only* is transformational. *Only* is attached via an attachment transformation to the subject, verb or complement. Since the meaning of the sentence varies according to the position of *only* we are then left with the result that at least one transformation which operates on derived structures changes meaning. However, as Partee (1971) points out, it is possible to have more than one *only* per sentence:

- (20) Only Peter wants only to sell us out.

The argument is therefore refuted on syntactic grounds.

A second aspect of the same argument is that *even* has the same distributional and meaning changing qualities as *only*, as illustrated in (21).

- (21) a. Even Peter wants to sell us out.
 b. Peter even wants to sell us out.
 c. Peter wants even to sell us out.

Possible counterevidence to the single occurrence of *even* appears in sentences like (22) with heavy contrastive stress on *Peter*.

- (22) Even Peter even wants to sell us out.

Partee (1971) suggests that the difficulty with (22) might be due

to a performance problem of interpreting the complex relations. In this regard it is necessary to note that the meanings associated with *only* and *even* are different. Whereas *only* separates the following constituent from other members of a set (e.g. *Peter* in (19 c) as opposed to *John, David, Grant, Tommy and Mel*), *even* includes the following constituent into a larger set (e.g. *Peter* as well as *Harry, Ernest and Phil*). A sentence like (22) then emphasizes that not only does *Peter* belong to a larger set but that the larger set is itself included in an even larger set. It may be due to this double inclusion that (22) is sometimes judged as unacceptable. It is not clear why double exclusions like (20) should be easier to interpret, however. Furthermore, the different relationships argue for different deep structure representations, with *only* and *even* occurring as surface manifestations of underlying inclusion and exclusion. In any event it is not obvious that the difficulties with *even* arise through transformational attachment, and Chomsky's argument is therefore weakened.

Another syntactic argument raised by Chomsky and attributed to Jackendoff is that the scope of negative elements is determined by surface structure. Because their positions vary, Chomsky believes that the negative elements in (23) are placed transformationally.

- (23) a. Not many arrows hit the target.
 b. Many arrows didn't hit the target.
 c. Not many arrows didn't hit the target.

The scope of the negative is determined by its position. In (23 a)

the whole proposition "many arrows hit the target" is the scope of *not*. In (23 b) on the other hand it is only the verb phrase which is negated. Since (23 c) contains two negative elements there are two scopes: in one instance the verb phrase is negated and in the other the proposition containing the negative verb phrase is denied. With the varying scope of the negative there are variations in meaning. Chomsky argues, therefore, that if the position of the negative is transformationally derived, the transformation involved is not meaning preserving.

The interpretivist analysis of (23) parallels the arguments dealing with *even* and *only*. It implies that there can only be one occurrence of a negative element (NEG) per sentence. However (23 c) demonstrates that such is not the case. If there were one NEG attached to the NP and another NEG attached to the VP then the two separate negations in (23 c) would be easily statable in underlying structures.

A third argument in a similar vein raised by Chomsky has to do with the reconstruction of presuppositions in sentences like (24) and (25).

(24) Hilary has climbed Everest.

(25) Marco Polo has climbed Everest.

Both of these sentences imply that Hilary and Marco Polo are both alive. In fact, without the presupposition that Marco Polo is alive (25) is only marginally acceptable. If (24) and (25) are conjoined to form (26) Chomsky argues that the presuppositions of (24) and (25) are lost.

(26) Marco Polo and Hilary have climbed Everest.

He then concludes that the transformational process deriving (26) from (24) and (25) does not preserve meaning.

A second presupposition implied by all of (24), (25) and (26) is that Everest continues to exist. This fact is shown in the contrast between these sentences and (27).

(27) a. Hilary had climbed Everest.

b. Marco Polo had climbed Everest.

c. Marco Polo and Hilary had climbed Everest.

The presupposition in (24) and (25) that Everest continues to exist is preserved in (26). Furthermore (26) *can* reflect the presupposition that Hilary and Marco Polo are both alive. What (26) cannot do is reflect the presuppositions that one of Hilary and Marco Polo is alive while the other is dead. Neither can (26) focus on the presupposition that Hilary is alive in (24) and that Everest continues to exist in (25). That is, (26) can only reflect similar presuppositions concerning the subjects or the predicates of (24) and (25) but the presuppositions can not be mixed. This aspect of Chomsky's argument is therefore invalid.

There is an independent nonsyntactic argument against surface interpretation. All three of the above illustrations (*only/even*, negative placement, and *has/have*) of transformational meaning change depend on the view that the focus (F) and presupposition (P) values are associated with some specific underlying syntactic feature. As outlined earlier it is possible to view F and P as part of the underlying structure of sentences that trigger

transformations which operate upon specifiable strings. If the purely syntactic environment for a transformation only appears in near surface representation, then that transformation can simply be ordered to follow the transformations which produce the appropriate environments for its own application.

Chomsky's three arguments sketched above all imply that the term in question is inserted and then given a reading. That is, they seem to imply that the speaker cannot predetermine the syntax of his messages and that whether he produces the syntactic sequence (23 a) "Not many arrows hit the target" or (23 c) "Many arrows didn't hit the target" is a matter of accident. Such implications are intuitively mistaken.

Partee (1971) brings to bear syntactic evidence which directly refutes one of Chomsky's arguments. Chomsky claims that since the position of *each* in (29) can be derived via a simple rule, the rule will have to be allowed even though meanings are thereby changed.

(29) a. Each of the men hates his brothers.

b. The men each hate his brothers.

Sentence (29 a) is ambiguous in that *his* can refer to *each of the men* or to someone else. The putative transform (29 b) does not share this ambiguity and *his* can only be interpreted as referring to some other person than those represented by *each of the men*. The derivation of (29 b) from (29 a) would therefore constitute a meaning change.

Partee points out that *each*-hopping, the transformation

which derives (29 b) from (29 a) also requires the change of *his* to *their* in sentences like (30).

- (30) a. Each of the men hates his own brothers.
 b. *Each of the men hates their own brothers.
 c. The men each hate their own brothers.
 d. *The men each hate his own brothers.

She then argues that this "pluralization rule" is similar to one required for conjunction reduction as in (31).

- (31) a. John hates himself and Bill hates himself.
 b. John and Bill hate themselves.

Chomsky proposes that (30 a) underlies (30 d) but that the latter is excluded by filtering devices. If this is so, then (30 c) must derive from (30 b) which is then also filtered out. The pluralization rule required for (30), and also required for (31), automatically eliminates the ungrammatical sequences of (30) without appeal to filtering devices or surface changes in meaning. Partee (1971 : 12) then concludes that the examples in (30) constitute an argument in favor of meaning preservation and against surface structure interpretation and accompanying filtering devices.

Not all of Chomsky's arguments have been discussed here, and not all of those discussed have been definitively refuted. Partee (1971) discusses a number of problem areas which make a final statement on the nature of underlying representations impossible at the present time. She points out that there are negative and positive arguments on both sides and that until more syntactic analyses are carried out the question will remain open. Aspects of

a grammar of usage may prove to be important factors in arriving at a final decision.

In spite of the fact that a final position cannot be taken with regard to the exhaustive specification of meaning in the underlying structures of some (English) sentences, this thesis demonstrates that French interrogatives can be so handled if the underlying structure is allowed to include presuppositional information to which transformations are sensitive. In particular, it is argued that nothing is gained by departing from the KPC in the analysis of French.

1.3 Organization

In Chapter II a chronological study of generative treatments of interrogatives lays the groundwork for evaluating, in Chapter III, aspects of recent proposals concerning the abstract representations of sentences. Specifically, Langacker (1969b) and Baker (1970) claim that systems of indices are required to relate a question morpheme to specific elements lower in a phrase marker. Evaluation of these proposals involves consideration of the nature of abstract sentences in general as well as a lengthy argument concerning the analysis of "embedded sentences" as relative clauses. The conclusion is that once the unnecessary trappings of abstract sentences and indices are discarded, these recent proposals are functional equivalents of an earlier proposal made by Katz and Postal (1964). The Katz-Postal analysis of interrogatives is adequate, in most of its essentials, for French. It is further

argued in Chapter III that linguists will have to address problems of usage before additional refinement of structural descriptions is likely to prove fruitful.

Chapter IV presents an outline of problems connected with describing French questions which use intonation to represent an underlying question morpheme. Some recent analyses prove to be untenable in that they attribute incorrect values to phonetic features and distributional factors. No satisfactory alternative is provided, but a direction for future research is proposed.

Chapter V examines inversion questions in French at some length and proposes a derivation which draws upon several recent proposals. None of the previous analyses is free from difficulties, yet each offers certain features which should not be discarded. The resultant composite solution contravenes the general methodological principle that two transformations should not be proposed when one could perform the same syntactic operations. This principle cannot be upheld in this instance without violating certain clear distinctions of meaning relating to focus and presupposition. The solution demonstrates the viability of the Katz-Postal constraint for the description of focus and presuppositional factors in their relationship to syntactic operations.

French questions formed with *est-ce que* and question words are examined in Chapter VI. This final section on French interrogatives describes such questions with considerably less abstraction than preceding generative analyses. Although the more abstract analyses provide elegant syntactic descriptions, they must be rejected on semantic grounds.

The conclusion is that focus and presuppositions *must* be taken into account in a syntactic description. This is illustrated most conclusively in Chapters III and IV. There is no evidence to suggest that abstract sentences (performatives) are the appropriate means of representing this information. The KPC can be maintained with no complication to the syntactic description if it is assumed that extralinguistic information is available to and used by a linguistic grammar. This assumption avoids premature speculation on the representation of the conceptual framework of an individual. A second conclusion is that the Katz-Postal proposal for handling questions using the KPC has not been significantly improved by recent attempts at extending the analysis. The Katz-Postal proposal is essentially followed here.

CHAPTER II
THE INTERROGATIVE MORPHEME

	<u>Page</u>
2.0 Introduction	20
2.1 Chomsky's 1957 position	20
2.2 Chomsky's 1962 position	25
2.3 Lees' early analysis	26
2.4 Klima's improvement	27
2.5 The Katz-Postal integrated <i>Q</i>	29
2.51 <i>Q</i> and <i>WH</i>	29
2.52 Proforms	33
2.53 Location of <i>Q</i>	39
2.54 The transformations	42
2.6 Kuroda: <i>WH</i> attachment	47
2.7 Higher sentences and <i>Q</i>	51
2.71 Sentence-type markers	51
2.72 Hypersentences	53
2.73 Hypersentences and pronominalization	56
2.74 Embedded hypersentences	60
2.8 Embedded interrogatives	64
2.9 <i>Q</i> as a segment	68
2.10 Segmental <i>Q</i> refuted	73
2.11 <i>Q</i> as an index on <i>ASK</i>	82
2.12 Concluding observations	84

CHAPTER II

THE INTERROGATIVE MORPHEME

2.0 Introduction

The analysis of interrogatives has played a prominent role in generative-transformational literature. The first formulation appears in Chomsky (1957). Several modifications and alternate proposals have been made since that time. These are examined here in chronological sequence and the major evolutionary changes presented.

Two major trends in the analysis of questions (and other sentences) are noted. With the advent of the Katz-Postal constraint on transformational operations, it became necessary to distinguish all sentence types and subtypes from one another. Katz and Postal (1964) put forth a bipartite proposal to differentiate questions from nonquestions and to separate different types of questions. Later workers (Ross, Sadock and others) proposed highly abstract sentential "performative" and "hypersentence" structures to incorporate a variety of semantic information concerning sentence types and other factors into underlying structures. These proposals are outlined in this chapter and examined and criticized in Chapter III.

2.1 Chomsky's 1957 position

Chomsky assumed a difference between 'yes/no' (YNQ) and 'wh' questions (WHQ). YNQ (see (1) below) are those questions to

which it is possible to respond either 'yes' or 'no' in a coherent dialogue. WHQ ((2) below) question some specific constituent of a corresponding affirmative sentence. These questions require answers such as noun phrases, prepositional phrases, or complete sentences to be part of a coherent dialogue.

- (1) a. Did John see the dog swimming yesterday? Yes/No
 b. Are you a plumber? Yes/No
 c. Do you have any saskatoons? Yes/No
 d. Have you weeded the garden lately? Yes/No
- (2) a. What did John see yesterday? A dog.
 b. $\left\{ \begin{smallmatrix} \text{Who} \\ \text{What} \end{smallmatrix} \right\}$ are you? I am the new janitor.
 c. Where did you go? Across to the bluff.
 d. When did you weed the garden? Last Thursday.

Chomsky proposed the following transformation to handle

YNQ.

- (3) Tq-optional¹:

¹The phrase structure rules which are relevant to understanding the symbols contained in the structural description (S.D.) appear as:
 (Chomsky 1957:39)

1. Verb $\rightarrow$ Aux + V
2. V $\rightarrow$ hit, take, walk, read, etc.
3. Aux $\rightarrow$ C (M) (have + en) (be + ing) (be + en)
4. M $\rightarrow$ will, can, may, shall, must
5. C $\rightarrow$ S in the context NP_{sing}⁻
 $\emptyset$ in the context NP_e,
 past

S, $\emptyset$, *past*, *en*, *ing* are affixes which provide appropriate inflections to verbs. For example *S* appears in the surface structure as the orthographic *-s* of *runs* in *The boy runs*.

The notational technique for stating structural changes (S.C.) has been modified since 1957 to the format

- S.A. NP - C - V
 $X_1 \quad X_2 \quad X_3 \rightarrow$
 S.C. $X_2 \quad X_1 \quad X_3$

where the elements of the S.D. are identified by the respective X's (or integer).

S.D. NP - C - V
 NP - C + M
 NP - C + have
 NP - C + be

S.C. $X_1 - X_2 - X_3 \rightarrow$
 $X_2 - X_1 - X_3$

This transformation converts strings of (4) to those of (5). This process is called Subject-Auxiliary Inversion, or SAI.

- (4) a. they - $\emptyset$ - arrive
 b. they - $\emptyset$ + can - arrive
 c. they - $\emptyset$ + have - en + arrive
 d. they - $\emptyset$ + be - ing + arrive²

- X_1 X_2 X_3
- (5) a. $\emptyset$ - they - arrive
 b. $\emptyset$ + can - they - arrive
 c. $\emptyset$ + have - they - en + arrive

²Chomsky is unclear about how the notation of, say (4 d) is derived. The PS rules will generate

- (A) they - $\emptyset$ - be + ing - arrive but not
 (B) they - $\emptyset$ + be - ing + arrive

It is not certain from Chomsky's presentation how the morphemes $\emptyset$ and *-ing* are attached to *be* and *arrive* respectively. We are told (p.39):

Let *Af* stand for any of the affixes *past*, *S*, $\emptyset$, *en*, *ing*.
 Let *v* stand for any *M*, *V*, or *have*, or *be* (i.e. for any non-affix in the phrase *Verb*). Then: $Af + v \rightarrow v + Af \#$, where $\#$ is interpreted as word boundary.

This takes care of the positioning of $\emptyset$, *-ing*, and so on, but on page 63, *Tq* applies before the affix rule. Presumably some intermediate rules would take care of stages of the transition from A to B before *Tq* applies. In the early stages of transformational theory there was little concern about the mechanical procedures used to arrive at derived structures.

d. $\emptyset$ + be - they - ing + arrive

X_1 X_2 X_3

Various other operations were carried out upon these strings to yield the final surface forms:

- (6) a. Do they arrive?
 b. Can they arrive?
 c. Have they arrived?
 d. Are they arriving?

The rising intonation of the sentences of (6) was directly attributable to Tq but Chomsky did not specify the mechanism by which intonation was assigned.³

The following two transformations derived WHQ:

(7) Tw-optional and conditional on Tq having applied:

- a. Tw_1 : S.D. X - NP - Y
 (X or Y may be null)

³Stockwell (1960) proposed that intonation contours be derived in the PS rules:

S → Nuc + IP (Nucleus + Intonation Pattern)
 Nuc → NP + VP (Noun Phrase + Verb Phrase)
 IP → C + JP (Contour + Juncture Point)

The intonation pattern would be distributed over the segmental elements (derived from N in the PS rules). Transformational reorderings like SAI would modify the distribution of the suprasegmental (intonation) features. The underlying assumption of this scheme is that there is an isomorphic relationship between syntactic configurations and intonation patterns. Arguments which refute this view for French are discussed in Chapter IV below. Langacker (1970) has argued against Stockwell's position using English data.

$$\begin{array}{ll}
 \text{S.C.} & X_1 - X_2 - X_3 \rightarrow \\
 & X_2 - X_1 - X_3 \\
 \text{b. Tw}_2: \text{S.D.} & \text{NP} - X \\
 \text{S.C.} & X_1 - X_2 \rightarrow \\
 & WH + X_1 - X_2 \\
 & \text{where } WH + \text{animate noun} \rightarrow \text{who} \\
 & WH + \text{inanimate noun} \rightarrow \text{what}
 \end{array}$$

These transformations invert the first two elements in the string and then attach the *WH* morpheme to the subject NP.⁴ The effect of Tw_1 is equivalent to Tq (SAI), but Chomsky (p.71) decides to retain it on the grounds that WHQ normally occur with falling (i.e. declarative) intonation and since Tq would produce a rising intonation, Tw_1 is required to reconvert the intonation to falling.⁵

Tq and Tw operate upon the phrase markers (P-markers) or underlying configurations which also underlie declarative sentences. The sentences of (8) are therefore distinguished only by the application of Tq or Tw.

- (8) a. John ate an apple.
 b. Did John eat an apple?

⁴The preliminary formulation given here converts *WH + NP* directly into *who* or *what*, and is somewhat less general than a revision suggested by Chomsky (1957:69 n.2) whereby a string *Z* is converted to *WH + Z*. Morphophonemic rules would operate upon *WH + Z* strings like *WH + he*, *WH + him* and *WH + it* to yield *who*, *whom*, and *what*.

⁵Chomsky associates falling intonation with kernel sentences and rising intonation with YNQ.

For brief discussion of 'kernel sentence' see Chomsky (1957:61, 1965:17-18).

- c. What did John eat?
- d. Who ate an apple?

2.2 Chomsky's 1962 position

In Chomsky (1962) interrogatives are handled in virtually the same manner as in Chomsky (1957). An interrogative transformation, or SAI, places the first verb (or tense morpheme, as the case may be) in front of the subject, and a *WH* transformation attaches a *WH* morpheme to an NP (*WH* attachment) and moves the *WH* + *NP* complex to initial position (*WH*-shift). A sample derivation is given in (9):

- (9) a. the man - present - watch the boy
- b. SAI →
 present - the man - watch the boy
- c. *WH* attachment →
 WH + the man - present - watch the boy
- d. various other rules →
 who watches the boy?

Given the underlying sequence (9 a), if SAI had failed to apply, then sentence (10) would have been derived.

- (10) The man watches the boy.

If SAI only had applied then (11) would have been derived.

- (11) Does the man watch the boy?

The sentences of (12) are derived by applying *WH*-shift to the subject and object NPs respectively.

- (12) a. Who watches the boy?
b. Who(m) does the man watch?

2.3 Lees' early analysis

Lees (1960:36-40) adopts Chomsky's analysis⁶, but modifies the notation slightly to incorporate the negative particle *not* and adverbs like *almost*, *always*, *after*, *probably*, *sometimes*, and so on, into the question transformation.

- (13) T-Question (SAI)

$$\begin{array}{lcl} \text{S.D.} & X_1 & - (\text{not})(\text{Pos}) - X_3 - X_4 \\ \text{S.C.} & X_3 & - (\text{not})(\text{Pos}) - X_1 - X_4^7 \end{array}$$

This transformation derives (14 a) and (14 b) (Lees 1960:14).

- (14) a. Does John come?
b. Doesn't John come?

Lees presents two rules to handle *WH* forms. The first front-shifts a noun or adverb and attaches a *WH* morpheme to it.

- (15) T WH_1

$$X - Q - Y \rightarrow WH + Q - X - Y$$

⁶Although the publication date of Lees antedates Chomsky (1962), Chomsky's work was first presented in (1958), as the full title of the work indicates.

⁷(Pos) is a cover symbol for *almost*, *always*, etc.... See Lees (1960:22).

$$\text{where } Q = \left[\begin{array}{l} \text{(Preposition) Noun (Post-nominal} \\ \text{modifier)} \\ \text{Adverb} \end{array} \right]$$

The first *WH* transformation yields the sentences of (16).

- (16) a. Who came?
 b. When did he come?
 c. With what did he kill her?

The second *WH* transformation (17) operates on strings containing a prepositional phrase but does not front the preposition so that instead of (16 c), (18) is derived.

(17) T WH_2

X + Prep - Noun (Post-nominal modifier) - Y

→ *WH* + Noun (post-nominal modifier) - X - P - Y

(18) What did he kill her with?

This analysis differs from Chomsky's proposal in that *WH* attachment and inversion are brought about by the same transformation, whereas Chomsky requires a separate transformation for each process. This difference has notational significance but is not fundamental because the operations performed are the same. Both Lees (p.38) and Chomsky (1957:112) specify that the *WH* transformation is to follow application of SAI, and both formulations allow for random selection of the questioned node by the transformation.

2.4 Klima's improvement

An improvement to both Chomsky's and Lees' analyses was

proposed by Klima (1964). The application of interrogative transformations depended on the presence of a *WH* in the underlying P-marker. The PS rule accounting for this was:

(19) $S \rightarrow (WH) \text{ Subject} - \text{Predicate}$

The presence of *WH* distinguished interrogatives from their declarative counterparts. An optional attachment transformation attached the *WH* to some indefinite pronoun inside the sentence. This was an improvement because the grammar could now differentiate sentence types on the basis of their underlying structures rather than solely on the characteristics of their derived structures. That is, it was no longer necessary to determine which transformations had applied in order to know if a particular sentence was interrogative or declarative. The distinction was specified as part of the PS derivation of a given string.

Klima's proposal did not, however distinguish between different types of interrogatives (YNQ and WHQ) nor between WHQ questioning the subject and WHQ questioning the object. Thus, given an underlying structure (20), any of (21) could derive.

(20) *WH* someone bought something.

(21) a. Did someone buy something?

b. Who bought something?

c. What did someone buy?

Since *WH* attachment was optional, (21 a) could derive. Sentences (21 b) and (21 c) would derive if *WH* was attached to the subject and object respectively. These distinctions are important if the Katz-

Postal constraint (KPC) discussed in Chapter I is followed.

2.5 The Katz-Postal integrated *Q*

2.51 *Q* and *WH*

As outlined in Chapter I, Katz and Postal (1964) proposed a general meaning preservation constraint (the KPC) on transformations. Given the meaning preservation and the unique recoverability conditions, the previous analyses of interrogatives are inadequate. Chomsky and Lees derived declarative sentences, YNQ and WHQ from the same underlying structure thus implying that they are synonymous. That they are not shows that the analyses violate the meaning preservation constraint. Further, since it is not possible to recover uniquely the putative common base of, say, "John ate an apple" and "Who ate an apple?", the recoverability constraint is violated.⁸ Katz and Postal therefore proposed that the *WH* morpheme be generated by the PS rules and that it be attached to some specific NP in the P-marker. Each type of question would thereby have a distinctive underlying structure.

On the basis of a variety of syntactic and semantic evidence Katz and Postal proposed that two morphemes, a *Q* and an optional *WH* be introduced into the underlying P-markers of interrogatives. The *Q* appeared in initial position and the *WH* was attached to a particular noun phrase, determiner, or sentence adverbial node. The nodes with attached *WH* constituted the questioned constituents,

⁸The same objections apply to the sentences in (21).

and the *Q* morpheme signalled the operation of relevant interrogative transformations, such as SAI. The morpheme *WH* must be derived by the PS rules because its presence or absence determines the meaning of the sentence.

Katz and Postal contend that (23) is a paraphrase of (22).

(22) Will you go home?

(23) I request that you answer 'X I will go home.'

The 'X' in (23) may be filled by a special class of sentence adverbials including *yes*, *no*, *of course*, and so on, but evasions such as *maybe*, *perhaps*, and *possibly* are not appropriate entries into X. One possible expanded version of (23) therefore is (24).

(24) I request that you answer 'yes I will go home.'

This semantic information, exposed in the paraphrase relations, is contained in the abstract morpheme *Q* which the PS rules generate in deep structures of YNQ.

The WHQ (25) and (26) are paraphrased in (27) and (28).

(25) Who saw someone?

(26) Who did someone see?

(27) I request that you answer 'X saw someone.'

(28) I request that you answer 'someone saw X'.

While the *Q* posited for YNQ will provide the appropriate semantic content 'I request that you answer...', it will not specify that it is the subject that is being questioned in (25) and (27) whereas it is the object that is questioned in (26) and (28).

Chomsky's, Lees' and Klima's proposals for *WH* questions

arbitrarily designated some NP in the P-marker and attached the *WH* morpheme to it. This procedure cannot properly distinguish the readings (27) and (28). If, however, the *WH* morpheme is generated in the PS rules, it is attached to the appropriate node in the deep structure and the pairs of paraphrases in (25)-(28) are accounted for.

The syntactic evidence bearing on the inclusion of a *Q* morpheme in YNQ is contained in the following sentences.

(29) Sentence adverbials

- a. $\left\{ \begin{array}{l} \text{certainly} \\ \text{probably} \\ \text{yes} \\ \text{maybe} \end{array} \right\} \quad \text{he is a doctor}$
- b. no he is not a doctor
- c. $\left\{ \begin{array}{l} \text{certainly} \\ \text{probably} \\ \text{yes} \\ \text{maybe} \end{array} \right\} \quad \text{is he a doctor}$
- d. *no is he not a doctor
- e. John is $\left\{ \begin{array}{l} \text{certainly} \\ \text{probably} \end{array} \right\}$ a doctor, isn't he

(30) Negative preverbs

- a. he $\left\{ \begin{array}{l} \text{scarcely} \\ \text{hardly} \end{array} \right\}$ eats
- b. *does he $\left\{ \begin{array}{l} \text{scarcely} \\ \text{hardly} \end{array} \right\}$ eat
- c. he sometimes eats

d. *does he sometimes eat⁹

(31) Embedded questions

a. He asked, "Can I go to the movies now?"

b. *I saw the picture which can the man paint.

(32) a. If he comes you will come.

b. If he comes will you come?

c. *If does he come will you come.

d. *If does he come you will come.

The co-occurrence restrictions on sentence adverbials and negative preverbs in (29)-(30) can be stated in terms of the presence or absence of a *Q* in the deep structure. For example, since (29 a) allows initial adverbs whereas interrogative (29 c) does not, it can be said that it is the interrogative nature of (29 c) which prevents the adverbs. Since *Q* is the descriptive feature ultimately distinguishing the syntactic structures of (29 c) from those of (29 a),

⁹Katz and Postal emphasize (p.101) that co-occurrence restrictions in English are to be treated as language specific phenomena and they are primarily concerned with developing a universal theory. Such a theory is not a grammar of a specific language in itself, but a grammar of a grammar. That is, the universal, or meta-theory, specifies what are the possible components of individual grammars, and does not imply that any given grammar must have a particular set of restrictions. The fact that sentences (30 b) and (30 d) are grammatical in some dialects does not then provide a counter-argument to the general restrictions nor to the presence of *Q*. The grammaticality of these sentences is merely a function of the idiosyncratic character of co-occurrence restrictions in general. The UESP (p.634) states that (30 b) and (30 d) are anomalous on semantic rather than syntactic bases.

For a clear and concise statement of the aims of linguistic meta-theory see G. Lakoff (1970, Chapter 1) and Gerald Sanders (1969:30-34). For some problems relating to the implementation of these ideas see G. D. Prideaux (1970, 1971) and the bibliography therein.

the behavior of the adverbs can be described in terms of the presence or absence of Q . Similarly, the morpheme Q constrains the embedding of questions in (31), as well as the miscellaneous restrictions in (32).

Postulating a Q in the underlying structures does not explain why these co-occurrence restrictions exist, it merely provides a convenient pivot in terms of which the restrictions are described. For example, given the underlying structure (32 a), SAI can apply to the second VP as in (32 b) but not to the first, as shown in (32 c) and (32 d). Since the behavior of all of (29)-(32) is related to possible syntactic correlations with interrogatives, a Q in their deep structures supplies a *modus operandi* for their description.

Additional support for the Q is seen in (33)-(34) where the same co-occurrence restrictions appear in WHQ:

$$(33) \quad \left\{ \begin{array}{l} \text{certainly} \\ \text{probably} \\ \text{yes} \\ \text{maybe} \end{array} \right\} \quad \left\{ \begin{array}{l} \text{who is a doctor} \\ \text{where is the doctor} \end{array} \right\}$$

*

$$(34) \quad * \text{What does John } \left\{ \begin{array}{l} \text{scarcely} \\ \text{hardly} \end{array} \right\} \text{ eat?}^{10}$$

2.52 Pro-forms

Thus far, the Katz-Postal analysis is consistent with the Klima proposal: interrogatives are distinguished from declaratives

¹⁰These sentences, too, are grammatical in certain dialects. They are acceptable in any dialect if the questioner knows that John scarcely eats some edible item but doesn't know what this item is.

by the presence of a special morpheme *Q* introduced by the PS rules. The Katz-Postal *Q* has a semantic value and serves as a syntactic trigger for interrogative transformations. In order to distinguish YNQ from WHQ, a *WH* morpheme is also introduced in the deep structure. This *WH* is attached to a particular node and designates that node as the "questioned" one. The basic structure of interrogatives then is:

- (35)
$$\begin{array}{c} X \\ \wedge \\ Q \dots WH \dots \dots \end{array} \quad (\text{Katz and Postal 1964:89})$$

Structure (35) has the interpretation:

- (36) I request that you give an answer, i.e., produce a true statement one of whose readings is identical with the reading of (35) except that the content of *Q* is not present and the reading associated with *X* in (35) is supplemented by further semantic material, i.e. semantic markers. (Katz and Postal 1964:90).

The introduction of a *WH* in the PS rules, and structure (35) together with its interpretation (36), provide an analysis of (37) and (38) which is not possible with a single *WH* introduced in sentence initial position (as per Klima) or attached transformationally (as per Chomsky and Lees).

- (37) Who did what to who(m)?

- (38) Where did who do what?

That is, if the *WH* morpheme or interrogative words and the semantic marker *Q* appear in the base structure, then it is possible to recover the base structure of the derived sentences (37) and (38) in the same way that it is possible to distinguish (39) from (40).

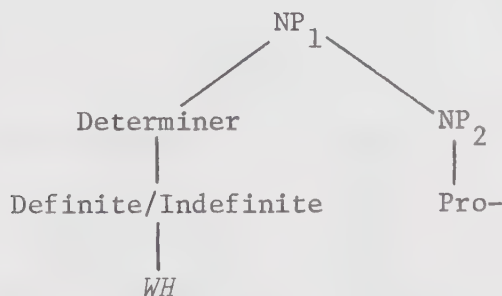
- (39) John plays chess as well as Sydney.

(40) John plays chess as well as Sydney makes shoes.

Katz and Postal further argue that the *X* in (35) immediately dominating *WH* is a determiner and that the determiner may be either definite or indefinite. If the determiner is an indefinite article (*a/some*), then single-word questions arise. These words are *who*, *what*, *where*, *when*, *why*, *how*, and so on. If the determiner is the definite article *the*, then double-word questions like *which one*, *what place*, *what time*, and so on, arise.

Connected with the definite/indefinite nature of the determiner is the degree of specificity of the following, or determined, NP. NP₂ in (41) is said to be filled by a proform rather than a fully specified segment.

(41)

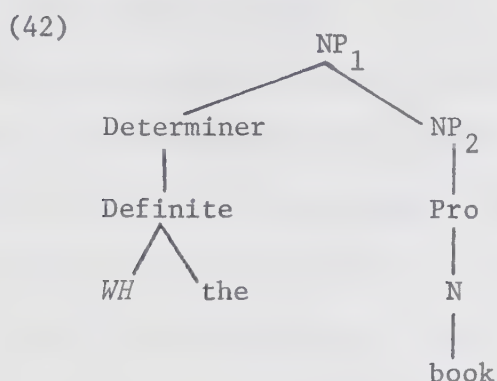


A proform is an incompletely specified element entered into a P-marker. The constituent *Pro* is intended to characterize the notion of "major categories" posited by Chomsky (1965:74).¹¹ If in a

¹¹A major category is a lexical category such as Noun and Verb. Functional notions like 'subject of...', 'predicate of...' and 'object of...' are defined in terms of the relational sequences of major categories.

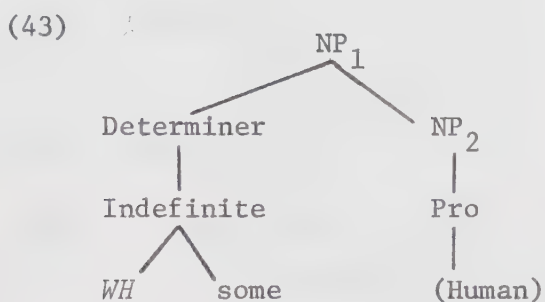
Although Katz and Postal do not acknowledge Harris (1957:172-177), he had previously defined a promorpheme as being one which showed the same distributional characteristics as a statable class and which referred to members of that class as antecedents. Harris recognized *WH* as a proform which precedes an S from which some particular constituent is missing. With slight modifications to allow more precision in details, the Katz-Postal analysis is a replica of Harris' work of seven years earlier.

structure like (41) the *Pro* node dominates a fully specified noun, and if the determiner is definite, then the interrogative form derived will be a two-word construction:



which book?

If on the other hand, the *Pro* remains unspecified and the determiner therefore indefinite, then a single-word question form will be derived:



who?

Surface realizations of pro-forms appear as *one* and *thing* in (44) and (45). The determiner is definite in (44) and indefinite in (45).

(44) I saw some thing.

(45) I saw someone.

The interrogatives corresponding to (44) and (45) are (46) and (47)

respectively.

(46) What thing did I see?

(47) Who did I see?

The notion of a definite/indefinite determiner associated with a *WH* morpheme and the notion of unspecified Pro-NP constituents conveniently capture the fact that the underlying structure (48) has no connection with the derived structure of (49), as Langacker (1969:5) points out.

(48) What does Herschel want?

(49) Q Herschel TNS want a bottle of vodka.

The French interrogative words *que* and *quel* (with variants *quels*, *quelle*, *quelles*) provide interesting surface structure support for this analysis. In (50) *que* appears in regular sentence initial position and does not demonstrate any number-gender agreements.

(50) Que voit-il?

What does he see?

Such agreements appear, however, in (51).

(51) a. Quel livre voit-il?

What book (masc. sg.) does he see?

b. Quelle femme voit-il?

What woman (fem. sg.) does he see?

c. Quelles filles voit-il?

What girls (fem. pl.) does he see?

d. Quels enfants voit-il?

What children (masc. pl.) does he see?

The difference depends on the degree of specificity of the NP containing the *WH* word. If the *WH* word is part of the determiner system, then the fact that the agreements of (51) exactly coincide with those of (52), which are possible responses to (51), is predictable.

(52) a. Il voit *le* livre bleu.

He sees the blue book.

b. Il voit *la* vieille femme.

He sees the old woman.

c. Il voit *les* filles aux chapeaux.

He sees the girls in hats.

d. Il voit *les* enfants du voisin.

He sees the neighbour's children.

The sentences (52) are also possible responses to (50).

In addition, (50) can be answered by (53).

(53) a. Il voit une maison.

He sees a house.

b. Il voit un spermophile de Colombie.

He sees a Columbia ground squirrel.

c. Il voit une épinette rouge.

He sees a tamarack.

This variety of possible answers to (50) reveals the variability of the questioned node (see (36) above). That is, (52) and (53) show that the variable (indeterminate) node of (48) is multiply ambiguous in just the way that a proform would predict. If the NP is not filled by a proform, then some other means of stating the contrast between (50) and (51) must

be made. If (50) could be specifically interpreted as an instance of each of the questions in (51), then some basis for a counter claim could be adduced. Such is not the case. Only in the most general sense can (50) be equivalent to (51).¹²

2.53 Location of *Q*

Within the framework of this analysis YNQ become special instances of WHQ, the questioned element being Sentence Adverbial. This accounts for the fact that the additional semantic information (required by *Q*, and located at *WH + X* for WHQ) of YNQ is generally given by the sentence adverbials *yes, no, of course, certainly*, and so on, of the answer. The parallel between English and French is apparent in (54)-(56).

(54) a. *Qui* est venu?

Who came?

b. *Jean* (est venu).

¹²Katz and Postal (p.93), point out this fact about the infinitely ambiguous nature of such a structure as (50). The ambiguity centers on the fact that *que* of (50) could be successively, and unrestrictedly, equated with each of the *quel* (*X*) + *NP* constituents of (51). Although certain contexts in which (50) were the equivalent of (51) could be constructed, (50) and (51) are not, in any usual way, paraphrases of each other. The presuppositions involved in these instances are different (see Langacker 1970:6). The presupposition of (50) might be stated as

(C) Il voit quelque chose.
He sees something.

but (51) would have the presupposition

(D) Il voit quelque(s)	$\left\{ \begin{array}{l} \text{livres.} \\ \text{femme.} \\ \text{filles.} \\ \text{enfants.} \end{array} \right\}$	He sees some	$\left\{ \begin{array}{l} \text{book.} \\ \text{woman.} \\ \text{girls.} \\ \text{children.} \end{array} \right\}$
------------------------	--	--------------	--

John (came).

(55) a. *Que* dit-il?

What's he saying?

b. (Il ne dit) *rien*.

(He's saying) nothing.

(56) a. *Est-ce que* Jean sait lire?

Can John read?

b. *Bien sûr* (Jean sait lire).

Certainly (John can read).

The sentences of (57) all contain *WH* words.

(57)

I noticed	{	where when how why	he went.	}
		who went.		
		whether he went.		

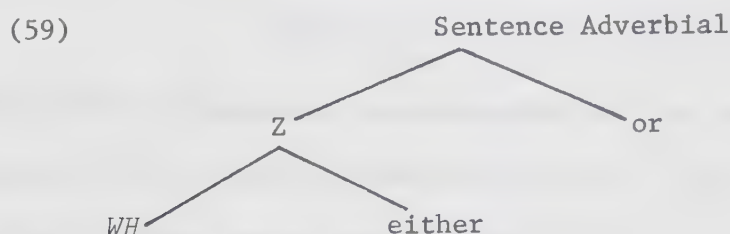
Although SAI has not applied, the *WH* words are almost identical to forms in *WH* questions. Katz and Postal argue that these facts can be explained by positing a *WH* in the underlying structure. The sentences of (57) are distinguished from their yes/no counterparts by the presence or absence of *Q* - the trigger for SAI.

(58) a. Either John came or not.

b. I noticed whether John came or not.

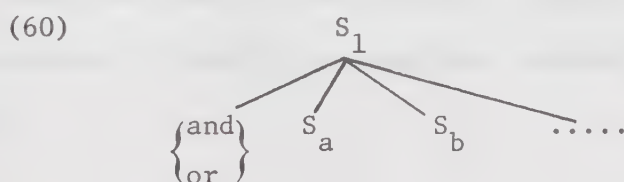
Given sentences (58) and their relation to the last one of (57), Katz and Postal conclude that *WH* is "dominated by Sentence Adverbial, one of whose elements is *either-or*," (Katz and Postal 1964:96).

This proposal will also account for the co-occurrence restrictions of examples like (33) showing contrasts such as "Certainly he is a doctor," and "*Certainly is he a doctor?". The Sentence Adverbial node could not be simultaneously filled by both an interrogative element (e.g. *either-or*) and a sentence adverb. The P-marker of (59) is intended to depict these relationships.



Sentence Adverbial is deleted in the presence of *Q*. It is this deletion, claim Katz and Postal, which obscures the *WH* character of YNQ.

Katz and Postal admit that the node *Z* is of undefined nature. Ross (1967:89) proposes that coordinate sentences like (58) have the following structure:



The exact implication for the location of *WH* in YNQ is not clear in this formulation. Presumably *S₁* in (60) would dominate a modified version of (59).

Ross points out that the non-suppletive French forms corresponding to English *either-or* support his CONJUNCTION COPYING rule which copies one conjunction from the set $\begin{Bmatrix} \text{and} \\ \text{or} \end{Bmatrix}$ before each of

the sister nodes in (60). He provides the set:

a. Et Jean et Pierre sont fatigués.

And John and Peter are tired.

'Both John and Peter are tired.'

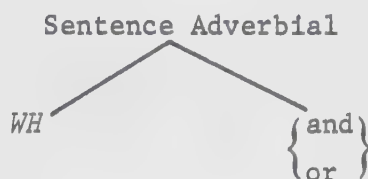
b. Ou Jean ou Pierre doit le faire.

Or John or Peter must do it.

'Either John or Peter must do it.'

CONJUNCTION COPYING eliminates the necessity for two branchings in (59). Therefore (59) should be modified to (61). This is a minor adjustment but it does remove the unknown *Z*.¹³

(61)

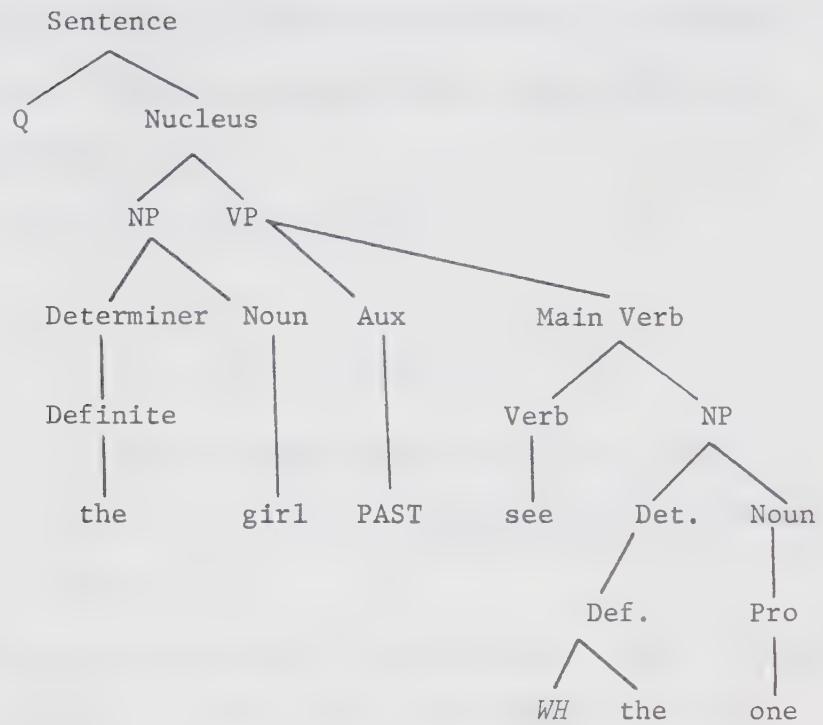


2.54 The transformations

Katz and Postal (1964:103-104) supplied the following trees as samples of underlying P-markers containing the *Q* and *WH* morphemes.

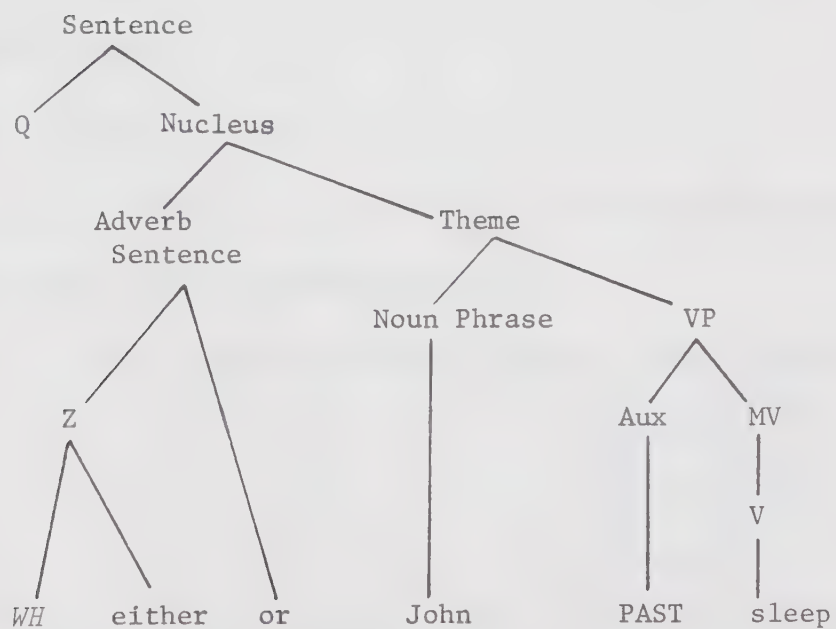
¹³Langacker (1969, section III) does not include *Sentence Adverb* at all. McCawley claims that conjunctions are predicates in any event. (1970:90).

(62)



which one did the girl see

(63)



did John sleep (or not)

They provided a set of five transformations to operate upon these structures. They are presented here using the Katz-Postal numbering and notation.

(64) T1. S.D. # + (Q), X, NP, Y

1 2 3 4

S.C. 1,2,3,4 → 1,3,2,4

(optional except where 1 does not contain Q)

where 3 dominates a sequence which begins with *WH*.

T1 shifts the 'questioned' NP to the left. That is, the NP dominating *WH* is moved to the left side of the P-marker. This accounts for the sentence-initial position of the interrogative (*WH* word) in the derived structure of (62) above. The optional status of this rule permits

(65) The girl saw *which one*?

with emphatic stress. That is, (65) is derived by non-application of T1 together with some special intonation rule(s).

(66) T2. # + Q, X, Noun Phrase, Tense + $\left\{ \begin{array}{l} \text{null} \\ \text{have} \\ \text{be} \\ \text{1 Modal 1} \end{array} \right\} \left\{ \begin{array}{l} \text{Verb + Y} \\ Y \\ 5 \end{array} \right\}$

1 2 3 2 4 2 2 2

→ 1,2,4,3,5 (obligatory except where 2 is a

Sentence Adverbial)

where 2 dominates *WH*.

Rule T2 positions the auxiliary in a procedure traditionally called inversion and referred to here as SAI. Its operation is equivalent to Chomsky's (1957) Tq discussed above: *did* in examples (62) and (63) is positioned before the subject.

(67) T3. Obligatory

S.D. # + Q, Sentence Adverbial, X

1 2 3

S.C. 1, 2, 3, $\rightarrow$ 1, null, 3

where 2 dominates WH

The Sentence Adverbial constituent dominating *WH* is deleted by T3. The obligatory status of T3 prevents the occurrence of *whether* in the derived structure of (63). The fact that T3 deletes the *WH* element and that T2 requires the presence of the *WH* argues in favor of ordering T2 before T3.

(68) Obligatory

S.D. #, Q, X, #

1 2 3 4

S.C. 1, 2, 3, 4 $\rightarrow$ 1, 3, 2, 4

where 3 does not dominate a *WH* (except for one which is not the left-most element of a Relative constituent)

Rule T4 repositions the *Q* to sentence final position when there is no *WH* present. Since all underlying structures containing *Q* must also contain at least one *WH*, T4 can apply only to P-markers to which T3 has applied. The sentence-final *Q* accounts for the rising

intonation of YNQ.¹⁴

(69) T5. Obligatory

S.D. X, Q, Y

1 2 3

S.C. 1, 2, 3 → 1, null, 3

where 3 is not equal to #

Finally, T5 removes all traces of the morpheme *Q* except in those P-markers to which T4 has applied. The condition attached to T5 ensures against the deletion of *Q* where its presence is required for intonation purposes as in (70).

(70) The car hit the train?

¹⁴Katz and Postal state (1964:111): "It is interesting, however, that the connection of *Q* with rising intonation in English, which we have partially shown, and our posited universality for *Q* suggest the beginnings of a possible explanation for the sometimes claimed universality of rising intonation in questions. This explanation could take the form of a universal morphophonemic rule for *Q*."

However, Swadesh (1944:317) in an article on the Amerindian language Chitimacha says:

The choice between the two phrase melodies depends on the make-up of the phrase. Thus the interrogative post-position *te* requires the high prefinal intonation. The interrogative forms of verbs and the simple imperative also take the high prefinal, and the two exclamative particles take it. In all other cases the high-final intonation is used. Chitimacha contrasts with English and other European languages in using a rising intonation for the statement and a falling one for interrogation.

Therefore the universal nature of the morphophonemic rule for *Q* could only be to the effect that there is an intonation change in the presence of a sentence final *Q*, rather than an intonation rise.

Langacker (1969, 1970) has attempted to show on independent grounds that intonation change in YNQ can be linked to their origin as conjoined structures. The application of this proposal to French question intonation is examined in Chapter IV below.

In summary, then, the Katz-Postal proposal for interrogatives is that PS rules generate underlying *Q* and an optional *WH* attached to one or more NPs. Sentences are thereby distinguished according to type (interrogative or declarative) and interrogatives are classified by the *WH* (YNQ or WHQ). This description allows for meaning preservation and concomitantly, recoverability of underlying structure from the surface structure. Furthermore, if *Q* is dominated by an adverbial node, then certain co-occurrence restrictions between questions and adverbs can be conveniently described. If *Q* is treated as a permutable element, question intonation can be described as a function of the sentence final position of *Q*. All subsequent studies of interrogatives have evolved out of the Katz-Postal proposal. Some recent proposals for the *Q* morpheme and objections to them are outlined in the following sections.

2.6 Kuroda: *WH* attachment

Kuroda (1969) proposed a unitary underlying morpheme (*WH*) for interrogatives rather than a bipartite sequence such as the Katz-Postal *Q* + *WH*. The *WH* would be introduced by the PS rules.

Questions could be formed by the transformational attachment of *WH* to an indefinite NP in the P-marker. The transformation characterizing this process is called an attachment transformation. Attachment in interrogatives involves adjoining *WH* as a 'sister' of the relevant NP. *WH* attachment takes the form (71) (Kuroda 1969:332).

WH X some-Pro $\rightarrow$

X WH-some-Pro

where WH-some-Pro $\rightarrow$ *who* if Pro is animate

WH-some-Pro $\rightarrow$ *what* if Pro is inanimate

That is (72 b) and (73c) would derive from (72a).

(72) a. WH some- $\left\{ \begin{smallmatrix} \text{one} \\ \text{thing} \end{smallmatrix} \right\}$ came.

b. Who came?

c. What came?

In order to account for sentences like (73) which contain two *WH* morphemes, Kuroda (1969:348) assigned iterative status to (71) and modified it to (74).¹⁵

(73) Who bought what?

(74) WH-attachment

WH X some $\left\{ \begin{smallmatrix} \text{one} \\ \text{thing} \end{smallmatrix} \right\}$ Y $\rightarrow$ WH + WH + some $\left\{ \begin{smallmatrix} \text{one} \\ \text{thing} \end{smallmatrix} \right\}$ Y

A subsequent deletion transformation of the form (75) is introduced to erase the original occurrence of *WH*.

(75) WH X $\rightarrow$ X if X contains WH¹⁶

This solution is attractive in that it reduces the number of separate symbols required for interrogatives. However, since Kuroda does not provide any indication of what a paraphrase of *WH* would be, we are left in some doubt about the proposal. Presumably

¹⁵Iterative means that the process may be repeated. In this instance the schematized form is $M X C Y \rightarrow M X M+C Y$. If either X or Y contain further occurrences of C, M may be adjoined to any or all such Cs. A non-iterative version of the above is $M X C Y \rightarrow X M+C Y$. M attachment occurs only once: even if X or Y did contain C, there is no unadjoined M available for copying.

¹⁶The condition is required to maintain the principle of recoverability. If X in (75) did not contain *WH*, then the surface structure would have no marker indicating that the semantic reading for the base structure had contained a paraphrase similar to that given by Katz-Postal for *Q*.

the *WH* in sentence initial position would be paraphrased something like "I ask you..." or "I request that you answer..." If this same *WH* is then attached to a NP node, the paraphrase property should be retained. The derivation and interpretation in (76) shows that this is accomplished.

(76) a. Underlying structure

WH someone bought something

b. attachment (iterative)

→ *WH WH* + someone bought *WH* + something

c. I ask you [I ask you + someone] bought
[I ask you + something]

d. (I ask you) who bought what

A general problem arises in determining the semantic interpretation of structures to which a morpheme is introduced transformationally. Although (76) might provide satisfactory semantic interpretations (or readings) at each of its derivational steps,¹⁷ it is impossible to predict from (76 a) which of the surface structures in (77) will derive.

¹⁷Paraphrase relations form an important part of the procedure used in determining underlying structures in generative grammars. If two surface syntactic structures have the same meaning, they are said to be paraphrases of each other. The underlying structure is one from which both structures can be derived independently via transformations. In the case of (76), the interpretation (76 c), (derived from (76 a) via (76 b)), is a correct interpretation of (76 d) or (73). Therefore (76 c) is a paraphrase of (76 d). Since (76 c) derives from (76 a) and since (76 a) purports to be the underlying structure of (76 d), the paraphrastic relationship between (76 c) and (76 d) is taken as supporting evidence that (76 d) in fact derives from (76 a).

- (77) a. Who bought something?
 b. What did someone buy?
 c. Who bought what? (same as 76 d)

Therefore, even given the condition that *WH* can be deleted only if there is some other marker indicating its presence, it is impossible to uniquely recover the underlying structure when nonpredictable elements are attached transformationally.¹⁸ That is, since all of the sentences of (77) derive from an identical underlying structure, it is implied that all (77) are synonymous. Since they are not, (76 a) cannot be the correct underlying structure (for them all) under the KPC. Some alternatives are therefore required.

One possibility is that the *WH* functions as an *operator*¹⁹ which is related specifically to appropriately indexed nodes in the tree. This modification would eliminate the requirement that *WH* attachment, (74), be iterative. The *WH* as an operator provides an appropriate semantic reading and the indexing provides the designation of appropriate questioned nodes.

This revised attachment transformation proposal is, then, reduced to being an apparent functional equivalent of the Katz-Postal *Q + WH* proposal. Comparison of (76) with (78) provides a clear indication of the functional equivalence.

¹⁸Kuroda does not discuss YNQ but it is assumed that, in general, the arguments here apply to them as well as to *WH* questions.

¹⁹The term 'operator' is used here in the sense of Baker (1970) and Bach (1968). An operator is an element which is tagged in some way and which is affixed to another element which bears the same tagging. The discussion of Baker's proposal below should clarify the role of operators. See below note (31), p.71.

- (78) a. *Q WH* + someone bought *WH* + something.
 b. I ask you [questioned element + someone]
 bought [questioned element + something]
 c. (I ask you) Who bought what

The derivation in (78) uses the Katz-Postal notation to depict the semantic content presented in (76). *Q* is given the standard interpretation "I request that you answer," or "I ask you." *WH* in (78) is given the significance "questioned element," that is, "provide information here." The attachment transformation proposal for interrogatives does not serve any useful purpose and will be merged with the Katz-Postal *Q* analysis.

2.7 Higher sentences and *Q*

2.71 Sentence type markers

An important aspect of the *Q* proposed by Katz and Postal was that it shared its sentence initial position with mutually exclusive elements *Imp* (imperative) and *Decl* (declarative). Each of these was generated as a dummy marker directly by the PS rules and was deleted so as not to appear in surface structures. The various sentence types were thereby specified in the underlying structure.

Cook (1968:61-64) has shown that *Q* in Korean is best viewed as a subcategory of "Sentence-Type". Sentence types in Korean are marked by overt mood markers. The category *Mood* is therefore required in the base component, not as a dummy which is eventually deleted, but as a regular morphological entry. Apart from a mood

marker some means of triggering appropriate transformations affecting various sentence types is an independent requirement for a grammar of Korean. Cook argues that subcategorizing *Mood* (MD) into *Declarative* (D), *Interrogative* (I), *Imperative* (Imp) and *Prepositive* (P)²⁰ eliminates a duplication of process between the independently motivated *Mood* and a sentence-type dummy marker. The category *Mood* is introduced in (80) and the relevant grammatical features are introduced in (79) (Cook 1968:61).

(79) Category Rule 6.

Auxiliary $\rightarrow$ (TM) $\begin{array}{c} \diagup \quad \diagdown \\ A \quad MD \end{array}$

(80) a. Grammatical Feature Rule 1

$$MD \rightarrow \left\{ \begin{array}{l} < \pm Q > \\ < \pm Pol > \end{array} \right\}$$

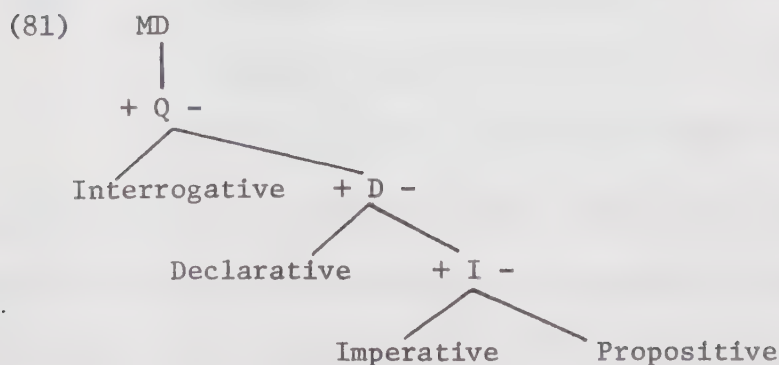
b. Grammatical Feature Rule 2

$$< -Q > \rightarrow < \pm D >$$

c. Grammatical Feature Rule 3

$$< -D > \rightarrow < \pm I >$$

These rules have the hierarchical relations (Cook, 1968:62):



²⁰For simplicity Cook does not treat *Apperceptive* "without any different effects on the essential points of the analysis" (p.61).

The presence of any one of the specifications of (81) in an underlying sentence structure makes that structure sensitive to the transformations which insert the overt mood markers. Such a structure is also sensitive to any other transformations which operate upon specific sentence types, such as interrogatives.

2.72 Hypersentences

Sadock (1969a,1969b) presents a broader proposal for handling sentence-type. His proposal not only incorporates a concept such as Cook's, but more clearly defines the domain of the sentence-type marker and the restrictions on the information contained therein. Specifically he proposed that type markers be contained in higher sentences.

Ross (1970) calls these higher sentences 'performatives'. The term 'performative' is drawn from Austin (1962), who noticed a distinction between the sentence types exemplified in (82) and (83).

- (82) a. Prices slumped.
- b. I like you when you giggle.
- c. Even Rodney's best friends won't tell him.
- (83) a. I pronounce you man and wife.
- b. I christen this ship the Queen Elizabeth.
- c. I bet you a buck it will rain tomorrow.

Austin observed that the sentences in (82) can be either true or false, whereas those in (83) can only be appropriate or inappropriate. Further, the sentences in (82) relate or describe a state of affairs. The act of uttering the sentences in (83), on the other hand, is

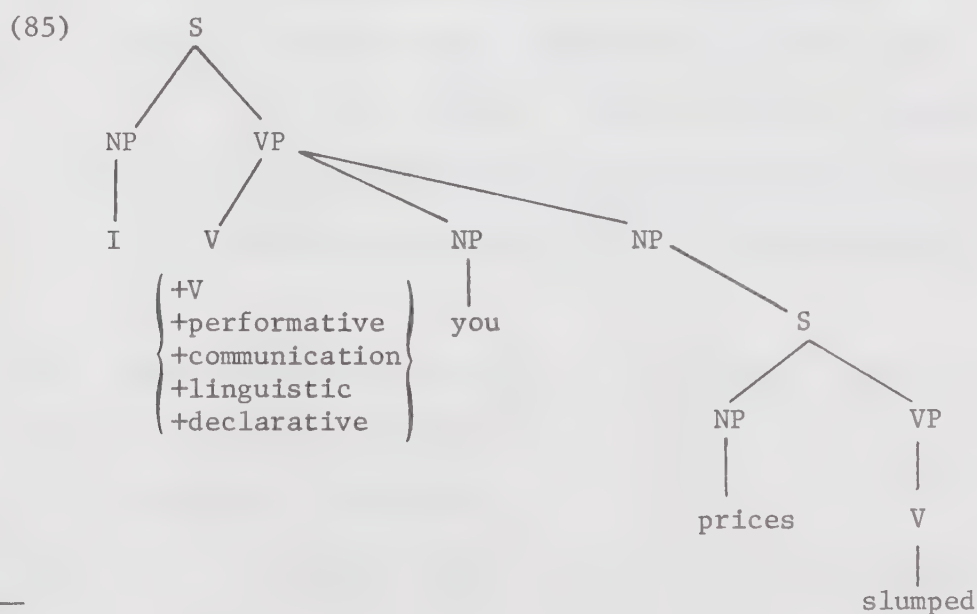
equivalent to performing the activity they designate. Austin called the former 'constatives' and the latter 'performatives'.

The characteristics of performatives are summarized by Ross (1970:222):

Performative sentences must have first person subjects and usually have second person direct or indirect objects in deep structure. They must be affirmative and nonnegative, they must be in the present tense, and their main verb must be one of the large class of true verbs which includes [verbs like those in (84)].

(84) advise, answer, ask, command, declare,
demand, inform, order, request, say

Ross justifies each of these conditions with data from English and suggests that an abstract performative sentence dominates all sentences that eventually reach the surface. That is, all sentences have a structure like (85) which is intended to underlie sentence (86).²¹



²¹For criticism of Ross (1970) see Fraser (1970a), Anderson (1970). Ross' position is subjected to especially severe criticism in P. Matthews (1971).

(86) Prices slumped.

Sadock (1969a,1969b) had previously published a similar proposal for an abstract higher sentence called a 'hypersentence' or 'superhypersentence'. These two types of sentences are essentially identical except that no elements from superhypersentences can ever appear in surface structure whereas hypersentence elements do occur in surface sentences. Both the hypersentence and the superhypersentence are abstract structures dominating lower, more 'concrete' structures. These abstract sentences serve to inject information required for the proper operation of transformations on the lower sentences. For present purposes the two are discussed as though they were one category: 'hypersentence' (S_H).

Hypersentences are made up of the following constituents:

- (a) a speaker noun-phrase which functions as the subject;
- (b) a verb which contains the sentence type morpheme -
that is, the verb in the hypersentence provides the
marker in the deep structure which determines whether
the sentence derived by the transformational component
will be interrogative, declarative, imperative and so
on;
- (c) a hearer NP which functions as the indirect object; and
- (d) a sentential noun phrase which functions as the
complement of the verb.

The first three (i.e. speaker NP, sentence marker, hearer NP) do not

usually have any overt realizations.²²

The speaker-hearer NP's, among other things mentioned below, provide nongrammatical information which is used in certain processes. Examples of these are honorifics in Japanese and Korean, female language forms for Dakota and Yena, and pronoun selection in German (*Du* versus *Sie*) and French (*tu* versus *vous*).²³

2.73 Hypersentences and pronominalization

Since hypersentences are alleged to introduce a considerable amount of information into linguistic structures, some detail of these properties is presented here. A critique of certain aspects of abstract sentences in general appears in Chapter III.

Much of the evidence cited by Sadock to support the S_H hypothesis is drawn from English pronominalization. He uses the hypersentence hypothesis and Langacker's proposed chain of command (Langacker, 1969a) to account for the fact that first and second person noun phrases in surface structure are pronouns.²⁴ Langacker's chain

²²Sadock (1969a) revised his proposal to allow for an even higher sentence, the superhypersentence, specifically to allow for the occasional occurrence of embedded surface hypersentence forms such as in the underlined clause in (a).

(a) I regret to inform you of your dismissal.

²³For detail of these languages see Sadock (1969b:293-298) and references therein.

²⁴Sentences like *Dr. Macher is a great man*, when *Dr. Macher* refers either to the speaker or hearer are considered as exceptional (Sadock, 1969b:304, says "subgrammatical") cases and the conditions on their occurrence are not well understood. Presumably there would be additional information somewhere in the S_H which would specify the conditions.

Gary Prideaux tells me that sentences such as the one cited here occur frequently in Japanese under different circumstances than in English. The necessary constraints are therefore language particular and would be specified along with the other information outlined in Chapter III, section 3.1-3.4.

of command is a proposal to account for the fact that sentence (87) is not grammatical but that (88) is.

(87) **The Eskimo* thinks *the Eskimo* should kill the seal.

(88) The Eskimo thinks *he* should kill the seal.

He observed that certain restrictions on pronominalization in conjoined sentences could be stated in terms of whether or not the antecedent (NP^a) preceded the pronominal form (NP^P). Sentences like (89) and (90) demonstrate this aspect, when *he* and *Ralph* are coreferential.

(89) Ralph is smarter than *he* looks.

(90) *He is smarter than *Ralph* looks.

Langacker further noted that pronominalization had to do with whether or not the NP^a dominated the NP^P , as in (91).

(91) The woman who is to marry *him* will marry *Ralph*
tomorrow.

Neither linear ordering nor depth of embedding was a sufficient condition in isolation. Both are combined into a 'command' relation:

We will say that a node A "commands" another node B if (1) neither A nor B dominates the other; and (2) the S node that most immediately dominates A also dominates B. (Langacker 1969a:167)

The command relationship leads to the following formulation of the restrictions on pronominalization:

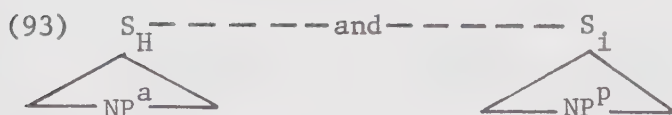
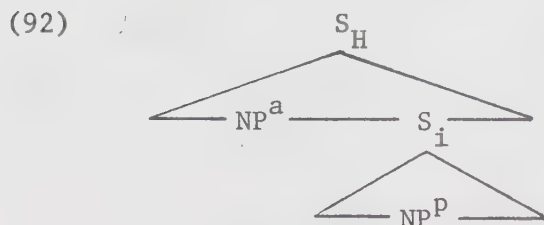
NP^a may be used to pronominalize NP^P unless (1) NP^P precedes NP^a ; and (2) either (a) NP^P commands NP^a , or (b) NP^a and NP^P are elements of separate conjoined structures. (Langacker 1969a:168)

However, failure to pronominalize NP^P , as in sentence (87)

above, yields deviant strings. Therefore, under certain conditions, pronominalization not only *may* occur, it *must* take place.

Sadock concludes that if there is an underlying higher sentence, (the hypersentence), the appearance of the speaker and hearer NP's in the hypersentence induces pronominalization of all coreferential elements in the sentential complement construction. This hypothesis accounts for the occurrence of first and second person morphemes in surface structure as pronominal forms. The formal statement of the relationships is:

- (a) Any noun phrase in S_H may pronominalize any noun phrase dominated by S_i ;
- (b) No noun phrase dominated by S_i may pronominalize a noun phrase in S_H . The two orientations are shown in structures (92) and (93). (Sadock 1969b:306)



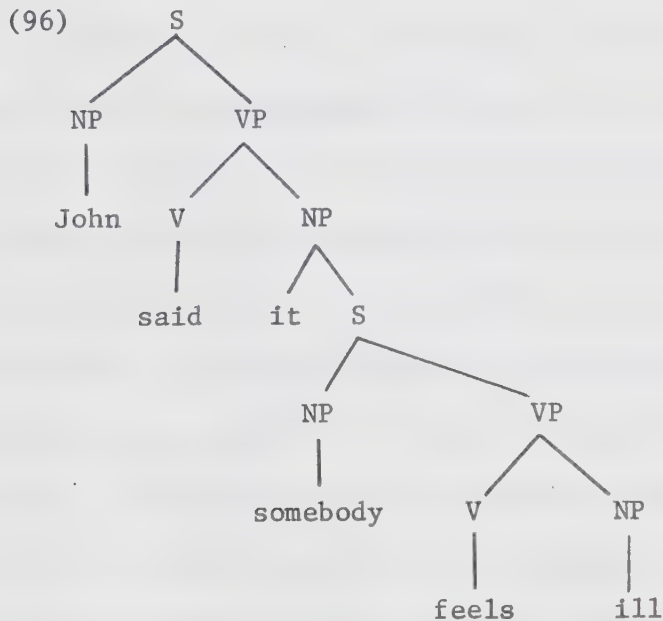
In this way, then, a hypersentence dominates the rest of the deep structure of a sentence.

Besides sentences in which *I* and *you* are the pronominalized forms of the hypersentence speaker and hearer, there are sentences in which these morphemes refer to neither the speaker nor the hearer:

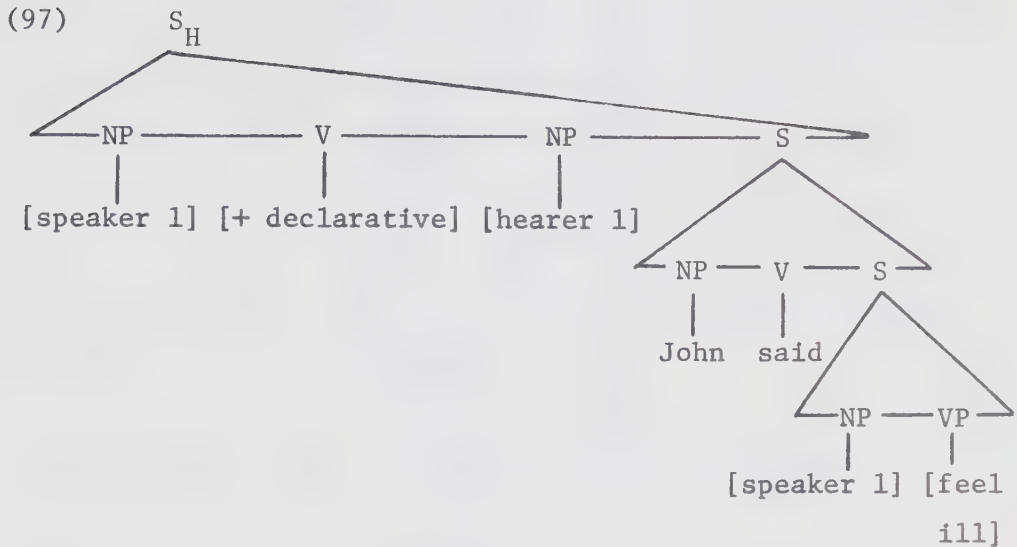
(94) John said, "I feel ill."

(95) John said I feel ill.

(94) is distinct from (95) because *I* does not refer to the speaker in (94), whereas it does in (95). *I feel ill* in both (94) and (95) is a sentential complement. As such it is represented in a generative grammar as an embedded sentence. P-marker (96) sketches the structures.



I of (94) and (95) is represented as *somebody* in (96). If *somebody* is equivalent to the speaker of the sentence, then (95) is derived. That is, the person who is speaking feels ill and John has stated that fact. Structure (97) is a hypersentence representation of sentence (95). The command relation in (97) then produces the appropriate pronominalization.

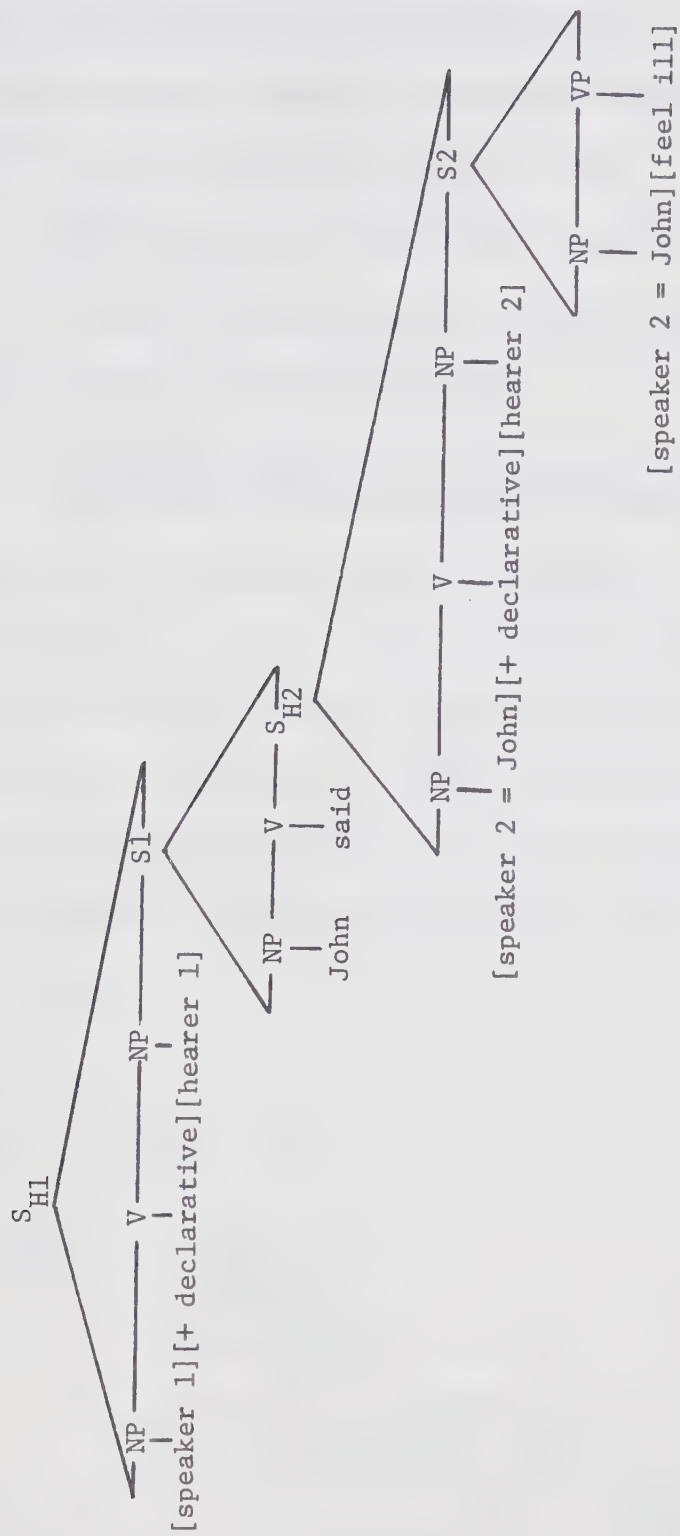


If *somebody* in (96) is equivalent to *John*, then sentence (94) results and its hypersentence structure (i.e. deep structure including hypersentence) would have to be different from (97). The difference would be that the speaker of (94) and the subject of the sentential complement are not coreferential, as they are in (97). Rather, the subject of the complement is coreferential with the subject of the matrix sentence. Given that a hypersentence dominates deep structure, and accounts for the mandatory occurrence of first and second person pronouns which do not otherwise have obvious antecedents, it is reasonable to claim that the sentential complement in (94) is dominated by a hypersentence which accounts for the *I* morpheme. In other words, hypersentences can be embedded.

2.74 Embedded hypersentences

If hypersentences can be embedded, then the hypersentence which dominates the entire sentence and the hypersentence which dominates the complement contain nonequivalent speaker and hearer noun phrases. Phrase marker (98) represents this information.

(98)



Once again, the appropriate pronominalizations are predicted by the command relationship. However, if sentences like (99) are to be accounted for, some restrictions must be made.

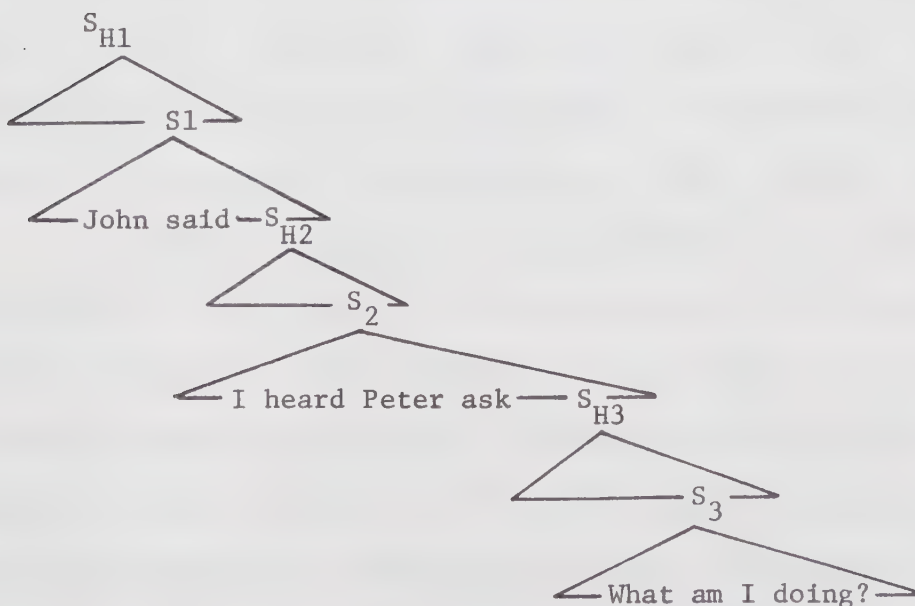
(99) John said, "I heard Peter ask 'What am I doing?'"

In order to account for the various pronominalizations in (99) Sadock posits a 'relative maximum':

A 'relative maximum' is a hypersentence made which is not constituent of a hypersentence. (Sadock, 1969b:311)

and states that the domain of pronominalization is between relative maxima.²⁵ That is, a hypersentence commands all that structure below itself and above the next lowest hypersentence in a tree configuration. Therefore S_{H1} of (98) only influences S_1 but not S_2 , (except of course to provide the information [speaker 1]). The skeletal structure of sentence (99) would be (100).

(100)



²⁵For more detail see Sadock (1969b:311-314).

The specifications contained in any one of the various hypersentences would influence the pronominalization only in the S nodes directly beneath it but above any *other* S_H.

A more general problem which arises with hypersentences is whether or not there are any restrictions on embedding. Since many embedded sentences are not subject to interpretation as sentence types (declarative, interrogative, etc.) it seems that hypersentences are constrained at least so as not to dominate embedded sentences functioning as relatives. If relatives can not be interpreted as questions, commands or exclamations, there can be no motivation for having them dominated by a sentence-type marker. The sentences in (101) demonstrate the surface facts.

(101) a. I need a book which is in the library.

b. *I need a book which is in the library?

Sadock suggested that hypersentences can only be embedded after verbs of linguistic communication such as *say, write, promise, ask, pledge*, and so on. These verbs, which also appear in Ross' original list of performative verbs (see (84) above), are presumably those appearing in the abstract verb categories of PM's (98) and (100).

As applied specifically to interrogatives, the hypersentence then contains a verb related to surface verbs like *ask, request, question, interrogate*. For convenience the hypersentence verb can be notated or abbreviated as *ASK*. The SAI transformation would be sensitive to some feature(s) of *ASK* and *WHQ* would presumably contain a *WH* morpheme attached to some NP in the underlying structure. With the speaker NP *I* and the nearer NP *you* the hypersentence then has the

reading (102).

(102) I *ASK* you.

The Katz-Postal reading of *Q*, viz. 'I ask you...' or 'I request that you answer...' is a *de facto* paraphrase of (102) and can therefore be called a performative reading.²⁶

2.8 Embedded interrogatives

Baker (1970) argues that a *Q* cannot have a performative reading. The basis for his argument derives from his interpretation of the sentences in (103) as containing embedded interrogatives.

- (103) a. I wonder whether John drinks.
 b. Alice didn't know what Albert bought.
 c. Alice didn't know why Albert bought it.

Baker provides six arguments to show that sentences (a) and (b) in (104) are more closely related to each other than either of them is to (104 c) and that since (104 a) is an interrogative, (104 b) also contains an interrogative element.

- (104) a. What did Albert buy?
 b. Alice didn't know what Albert bought.
 c. Alice didn't wash what Albert bought.

²⁶From this discussion of the functioning of abstract sentences it can be concluded that such structures are attempts to formulate a speaker's knowledge and intentions in syntactic terms. It is argued in Chapter III, sections 3.1-3.4, that while such data are important to the production and use of a language, the performative, or hyper-sentence, is a questionable mechanism for relating speakers' beliefs, attitudes and intentions to the syntactic structures of his language.

The first argument delineates the distribution of *WH* words in embedded clauses. The *WH* word 'what' can be replaced in (104 b) by any other interrogative word but not in (104 c). The sentences in (105)–(108) are paradigm cases of this substitution.

- (105) a. Why did Albert buy it?
 b. Alice didn't know why Albert bought it.
 c. *Alice didn't wash any Albert bought it.
- (106) a. Whose dog did Albert buy?
 b. Alice didn't know whose dog Albert bought.
 c. *Alice didn't wash whose dog Albert bought.
- (107) a. Which one did he like best?
 b. Alice didn't know which one he liked best.
 c. *Alice didn't wash which one he liked best.
- (108) a. Did Albert buy it?
 b. Alice didn't know whether Albert bought it.
 c. *Alice didn't wash whether Albert bought it.

Since the (a) and (b) sentences in (105)–(108) share the characteristic of *WH* word substitutability, they form a class of related sentences which excludes the (c) versions.

The second argument is that (104 a) and (104 b) both have corresponding cleft versions whereas (104 c) does not:

- (109) a. What was it that Albert bought?
 b. Alice didn't know what it was that Albert bought.
 c. *Alice didn't wash what it was that Albert bought.

Again (a) and (b) share characteristics which set them apart from (c).

The third factor differentiating (104 a) and (104 b) from (104 c) is the potential presence of *else* in the former but not the latter:

- (110) a. What else did Albert buy?
 b. Alice didn't know what else Albert bought.
 c. *Alice didn't wash what else Albert bought.

A fourth distinguishing feature appears in (111) where two *WH* words are possible in the (a) and (b) versions but not in (c).

- (111) a. What was given to whom?
 b. Alice didn't know what was given to whom.
 c. *Alice didn't wash what was given to whom.

The fifth argument depends on the acceptance of degrees of ungrammaticality and the grouping of ungrammatical sentences according to their level of unacceptability. Sentences (112 a) and (112 b) show that it is possible to question the head noun in a noun phrase while leaving a relative clause modifying that head noun intact (cf. Chomsky 1964:69).

- (112) a. You know a boy with (who has) a scar.
 b. Who do you know with (who has) a scar?

Baker contends that it is possible to do this with sentence (104 b) but not (104 c). His examples are:

- (113) a. ?What that was new and different did Albert buy
 for Alice?
 b. ?Alice didn't know what that was new and different
 Albert bought for her.

- c. *Alice didn't wash what that was new and
different Albert bought for her.

He contends that (113 a) and (113 b) are alike in their marginal acceptability and are thereby distinct from (113 c).

The final consideration²⁷ is the fact that (104 b) has a paraphrase containing the noun *answer* as the object of the verbs. Sentence (104 c) cannot have such a paraphrase:

- (114) b. Alice didn't know the answer to the question:
what did Albert buy?
c. *Alice didn't wash the answer to the question:
what did Albert buy?

Since the (b) versions of (104)-(114) share certain characteristics with the (a) versions and since the (a) versions are direct questions, Baker concludes that the (b) versions contain embedded questions. If embedded complements can be either declarative or interrogative the ambiguity in sentence (115), where two interpretations are possible, can easily be accounted for.

- (115) I know what he knows.

The interpretations of (115) are given by Lees (1960:60) as (115').

- 115' a. If he knows X, then I know he knows X.
b. If he knows X, then I know X.

Baker takes the independent requirements of (115) as support for his conclusion.

²⁷That is, the final consideration which Baker presents in the published version. He says (footnote 3, p.198) that additional arguments appear in his unpublished dissertation.

As interrogatives, then, sentences like (104 b) contain a *Q* morpheme. If the *Q* is given a performative reading as it is in the Katz-Postal analysis, then nonsensical semantic readings result: the putative reading for (104 b) would be (104 b').

(104) b. Alice didn't know what Albert bought.

b'. Alice didn't know I ask you: what did Albert buy.

Baker concludes that the anomalous reading (104 b') is reason for rejecting a performative reading.²⁸

2.9 *Q* as a segment

Having rejected a performative *Q*, Baker presents several arguments in favor of a segmental *Q*. The first argument is based on data presented by Greenberg (1966:81-83) which Baker interprets in the following way.

A. All VSO²⁹ languages studied by Greenberg have both a sentence-initial particle for YNQ and a sentence-initial WH word.³⁰

B. SOV languages, on the other hand, have interrogative

²⁸Evidence is presented below in Chapter III, sections 3.5-3.7, which forms the basis for an argument that Baker's analysis of embedded interrogatives may be mistaken.

²⁹The notation VSO indicates the sentential word order Verb-Subject-Object. SOV indicates the order Subject-Object-Verb, and so on.

³⁰The term 'WH word' means 'question word' and is used here as an abbreviation with no claim attached to the WH.

Baker's second and third arguments in support of segmental *Q* depend on the fact that the *WH* movement rule can be viewed as an operation whereby the *WH* morpheme replaces the *Q*. The second is that the ungrammatical sentences of (119) will not be derived because their derivation would involve more than a single application of *WH* movement (Baker:209).

- (119) a. *Who what gave to whom?
 b. *Who what to whom gave?
 c. *Which men which states did the President assign
 to?

Since the first application of this rule would effectively delete the *Q*, the environmental requirements of (117) would no longer be available.

The third argument is that a replacement conception of *WH* movement accounts for the fact that the sentences in (120) are ungrammatical.

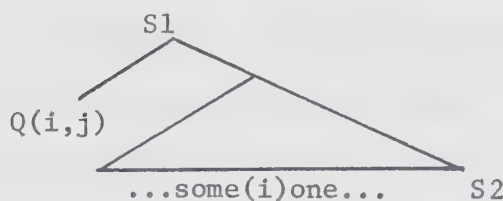
- (120) a. *We're not sure whether who Bill saw.
 b. *We're not sure if who Bill saw.

If either *WH* movement or *Q* lexicalization occurred, the environment for the other could not be met. Therefore, if either *whether* or *who* were first produced in (120 a) the other would automatically be excluded. Sentence (120 b) is ungrammatical because it too would derive through a violation of the single lexicalization condition.

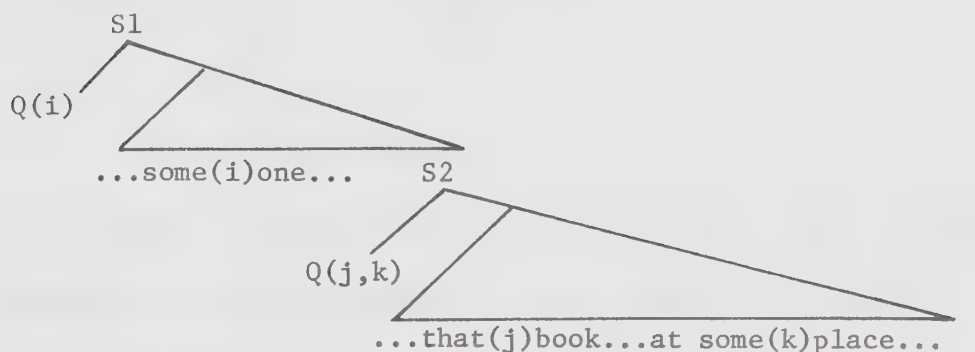
Having presented his defence of segmental *Q* on the grounds that a performative reading of *Q* produces deviant semantic readings and that segmental *Q* explains the operations outlined above, Baker

proposes that Q is an operator³¹ bound to specific constituents below it in the tree by an index system of integers (p.215). He presents the trees (121) and (122) as structures underlying (123), an ambiguous question having (124) and (125) as possible answers.

(121)



(122)



³¹Bach (1968:106) comments on operators as follows:

It is natural to think about adapting a system of operators (quantifiers) like those used in logical systems and allowing these operators to function with the variables in the deep structures of sentences. The class of operators will include the more abstract elements underlying such forms as articles, *some*, and the like. We define the *scope* of an operator Q as the string dominated by the highest S to which Q is prefixed. If an operator Q is followed immediately by a variable x then we say that every occurrence of x within the scope of Q is *bound* by Q . Among the operators will be a *generic* operator, an *all* operator, a *some*, a *focus* or definiteness operator, a *question* operator, and the like.

(The Q in this passage is not the interrogative morpheme Q although the latter is a member of the class of operators referred to as Q by Bach.) See also footnote 19, p.50.

(123) Who remembers where we bought which book?

(124) John and Martha remember where we bought which book.

(125) John remembers where we bought the physics book
and Martha and Ted remember where we bought *The Wizard of Oz*.

That is, in (124) John and Martha each remember the location at which each book was bought. In (125) on the other hand, John remembers some facts and Ted and Martha remember another set.

The integers (i, j, k, ...) specify the scope of *Q*, so that *WH* insertion (126) applies³² to the appropriate node below it.

$$(126) \quad Q(\dots, i, \dots) \times \begin{Bmatrix} \text{some}(i) \\ \text{that}(i) \end{Bmatrix} \quad \begin{matrix} N & Y \end{matrix}$$

$$\begin{matrix} 1 & 2 & 3 & 4 & 5 & \rightarrow \\ 1, 2, WH + 3, 4, 5 \end{matrix}$$

After *WH*-insertion, a modified *WH* movement rule, (127) shifts the *WH* to its appropriate surface position, so that the questioned NP effectively replaces the *Q*.

$$(127) \quad Q(\dots, i, \dots) \times WH + \begin{Bmatrix} \text{some} \\ \text{that} \end{Bmatrix} (i) \quad \begin{matrix} N & Y \end{matrix}$$

$$\begin{matrix} 1 & 2 & 3 & 4 & \rightarrow \\ 1, 3 + 2, \emptyset, 4 \end{matrix}$$

³²Since the NP's to be questioned are marked by integers in deep structure, the *WH* morpheme can be introduced transformationally. This *WH* insertion is not subject to the criticism brought against Kuroda's *WH* attachment transformation in section 2.6.

2.10 Segmental Q refuted

Langacker (1969b, 1971) argues that *Q* cannot have a performative reading because sentences like (104 b) are thereby interpreted as (104 b').

(104) b. Alice didn't know what Albert bought.

b'. Alice didn't know I ask you: what did Albert buy.

That is, he believes that the (b) versions in (104)-(114) contain embedded interrogatives and that a performative semantic reading of the embedded *Q* leads to mistaken or nonsensical interpretations. On this point he agrees with Baker's analysis. Nevertheless, he rejects Baker's arguments in favor of a segmental *Q*.

Baker's first argument was that a segmental *Q* is the direct source of *if/whether*, as in (118) above. Langacker (1969b:Section III) has attempted to demonstrate that *whether* derives from *WH + either*. Baker's position requires that (128) be the underlying structure for (129).

(128) Q (OR (Jill is pregnant))(OR (Jill is just putting on weight.))

(129) Is Jill pregnant, or is she just putting on weight?

Langacker argues that sentences like (130) and (131), where the application of SAI corresponds with *WH* shift, present evidence that SAI is dependent upon *WH* shift.

(130) Jill ate *what*?

(131) *What* did Jill eat?

Corroborating evidence appears in the French sentences (132)-(134).

(132) Elle aime qui?

Who does she like?

(133) Qui aime-t-elle?

Who does she like?

(134) *Aime-t-elle qui?

*Does she like who?

The dependency relation between *WH* shift and SAI, Langacker claims, resides in the *WH* morpheme: SAI only applies when *WH* appears in initial position.

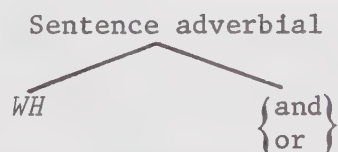
Sentence (135) demonstrates that SAI applies to conjunctive questions (CQ).

(135) Did John or Harry go hunting?

= (Which person went hunting?)

Katz and Postal (1964:100) recognized that CQ were related to YNQ and used the relatedness to support their derivation of YNQ from conjunctive structures containing a sentence adverbial dominating *WH* and *either/or*. Their representation was modified from (59) to (61), which is repeated here.

(61)



Since sentences like (129) require the *either/or* morpheme, which Langacker abbreviates as *OR*, and since they are subject to SAI and therefore contain an initial *WH*, Langacker proposes that (129) has an underlying structure like that in (136).

- (136) Q(WH + OR (Jill is pregnant)) (WH + OR
(Jill is just putting on weight)).

The left-most occurrence of *OR* in surface structures is *either*, as shown in (137).

- (137) a. Either Jill is pregnant or she isn't.
b. *Or Jill is pregnant or she isn't.

Langacker cites the distributional relationships in sentences (138) and (139) where a disjunction is formed by pairing of *whether* and *either* with *or*.

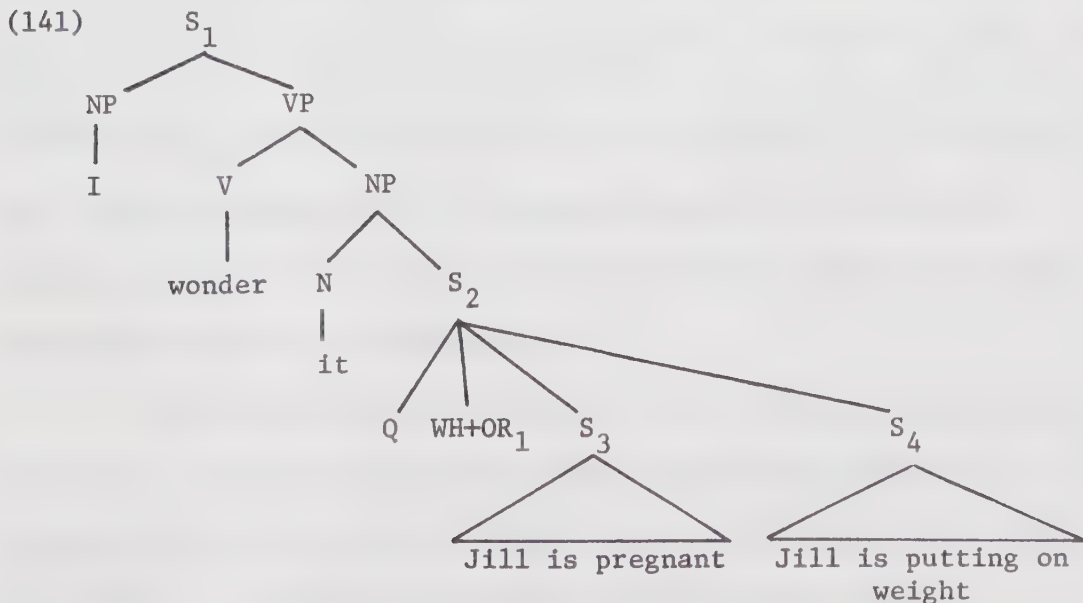
- (138) I wonder whether Jill is pregnant or not.

- (139) Either Jill is pregnant or not.

He takes this fact as support for his analysis. He also provides example (140).

- (140) I wonder whether₁ Jill is pregnant or whether₂
she is just putting on weight.

In his analysis this sentence has an underlying structure like (141).



- (143) I wonder whether Jill is pregnant or I wonder
whether she is putting on weight.

However sentence (143) is not a paraphrase of (140). If (143) were an approximation of an appropriate underlying form of (140) it would be impossible to prevent sentence (144) from arising because Langacker attaches *WH + OR* before conjunction distribution.

- (144) *I wonder whether Jill is pregnant whether I
wonder whether she is putting on weight.

In any event, one paraphrase of (143) is (145).

- (145) Either I wonder whether Jill is pregnant or
I wonder whether she is putting on weight.

Since (145) is not a paraphrase of (140), the second possible account for two *OR* morphemes before the second disjunction in (140) is not tenable. Langacker's refutation of Baker's first argument is therefore weakened because of the difficulty his alternative has with *embedded or whether*.

Baker's second point was that a segmental *Q* provides a natural means of allowing only one initial occurrence of *WH* words. The examples like "*who what gave to whom?" in (119) required this condition. Furthermore Baker proposed that *Q* substitution and *WH* shift are universals. Langacker presents two arguments against this position.

The first rests on sentences like (146)-(148) which contain

(146) What did who see?

(147) When did who leave?

(148) Where did which dog bury a dinosaur bone?

These examples, of which Langacker says (p.16) "the proper analysis ... is not immediately obvious", do not constitute counterexamples to Baker's position because his *WH* insertion rule allows any number of *WH* words in a sentence, and his *WH* movement rule permits only one sentence-initial *WH* word. It is impossible to see how sentences (146)-(148) violate these conditions.

The second argument is the assertion that Samoan permits more than one *WH* word to appear in initial position. This is a clear violation of the *Q* substitution principle and therefore helps to invalidate it.

Baker's third defence of segmental *Q* was that it prevented mixed *WHQ/YNQ* as in (120):

(120) a. *We're not sure whether who Bill saw.

b. *We're not sure if who Bill saw.

Counter-evidence for this claim is provided by both French and English. Sentence (149) has two possible forms, characterized here by the two English translations.

(149) Elle aime qui?

(i) She likes *who*?

(ii) Who does she like?

³³ Langacker (1969b:84) provides a vague reference to section I of his MSS as containing an argument against Baker's *Q* replacement formulation of *WH* shift. I take it that he is referring to examples (146)-(148) and accompanying discussion.

The first version demonstrates that *WH* insertion (or attachment) has occurred but *WH* shift has not. Under Baker's proposal an initial *Q* would remain. Since *Q* is never subject to phonological specification, two courses are open. One would be the ad hoc introduction of a *Q* deletion rule which applied only if *Q* lexicalization or *WH* shift had not. Or *Q* could undergo the *Q* lexicalization rule (116). The resulting structure would be both a *WHQ* and a *YNQ* since *WH* insertion creates *WHQ* while *Q* lexicalization creates *YNQ*. There would therefore be no way to prevent sentence (150) from being derived.

(150) *Elle aime qui ou non?

*Who does she like or not?

Baker's proposal appropriately prevents sentences like (151) in English because *WH* shift is obligatory.

(151) *Who does Gertrude like or not?

However, Langacker argues that one possible reading for this sentence is (152) which can be paraphrased as (153) and (154).

(152) Who does Gertrude like -- or who doesn't she like?

(153) Is it or is it not the case that Gertrude likes the person identified in (154).

(154) What is the identity of the person; such that Gertrude bears to him the attitude specified in (153).

Since (153) and (154) presume each other, (152) involves an "infinite

regression". Sentences like (150) and (151) are therefore to be excluded on the grounds that they have no semantic representation. Their exclusion is not due to a process of syntactic replacement.

Finally, Langacker argues that Baker's two-part hypothesis to account for the putative universals exposed by Greenberg can be replaced by other proposals. Ross (1967) claims that languages do not have rules which move constituents indefinitely to the right. This would account for the lack of rightward shift of *WH*. This much of the counter-argument holds.

The rest of Langacker's remarks are unconvincing. The following quote is presented in the interest of clarity and precision (1969b:88):

Beyond this [the right-movement constraint], of course, we must account for the failure of *WH* shift to apply leftward in languages that have final question particles. At worst, this could be stated as an ad hoc feature of the *WH* shift rule. Or if this is not possible it could be stated as an unexplained restriction in linguistic metatheory. Notice that Baker's solution is in reality no less ad hoc; nothing in his analysis leads one to expect any correlation between the position of a question particle and the direction of *WH* shift. From this much alone one can reasonably maintain that Baker's ... argument fails to establish the claim that *Q* must be accorded segmental status.

While one can agree with Langacker's characterization of Baker's analysis of the relationship between particle position and *WH* shift, it is unacceptable to replace one ad hoc solution with another. Langacker provides the following speculative characterization of such an alternate analysis (1969b:91).

...Suppose that all those languages with final question particles turn out to be SOV languages in underlying structure, and that all those languages with initial particles can be shown to be underlying VSO languages. It might then turn out that a certain definable class of movement rules, including *WH* shift, is restricted to VSO languages, so that the failure of *WH* shift to apply leftward in languages with final question particles follows as a special case of a more general metatheoretical principle.

...But it should be emphasized that the restrictions on *WH* shift in this framework are, at worst, no more ad hoc than those proposed by Baker.

Despite Langacker's claim to the contrary, this speculative invention does NOT provide "a principled reason for expecting question particles to occur initially in VSO languages and finally in SOV languages." It does not because the account resides on an unexplained general condition. If it could be shown that *WH* and particle position in surface structure were in some way related to the position of the verb (or other constituent) THEN it could be claimed that "a principled" analysis had been found.³⁴

In summary, Langacker does not provide a tenable alternative to Baker's *if/whether* lexicalization. Nor does he present a convincing case linking types of question formation to word order. He does however, present a case in favor of attributing the exclusion of mixed WHQ/YNQ to the impossibility of assigning a meaningful interpretation to them. A second successful argument is that Samoan is a counterexample to the proposal that a segmental Q prevents more than one sentence initial WH word. On the basis of these last two arguments Baker's segmental Q stands refuted.

³⁴Bach (1971) has approached such a principle. He suggests that *WH* movement only occurs leftward, and that movement cannot be beyond the scope of the governing verb.

2.11 Q as an index on ASK

Langacker rejects both a performative interpretation of *Q*, and a segmental *Q*. At the same time he accepts the basic position that sentences like (b) in (104)-(114) contain embedded interrogatives. He also concludes that sentences like (123) require a scope feature similar to Baker's *Q* as it appears in (121)-(122) and accompanying transformation. Langacker calls the scope feature *OP*.

OP relies upon the existence of higher sentences, such as performatives or hypersentences.³⁵ It has recently been assumed (see discussion above, sec. 2.7) that it is the verb of higher sentences which contains the sentence-type morpheme. In the case of interrogatives this verb can be called *ASK*.³⁶ One of the features of *ASK* is the operator *OP*. This *OP* is bound to various constituents lower in the structure by a system of indices. For example, sentence

³⁵Since Langacker uses the term 'performatives', it will be used in the ensuing discussion of this point.

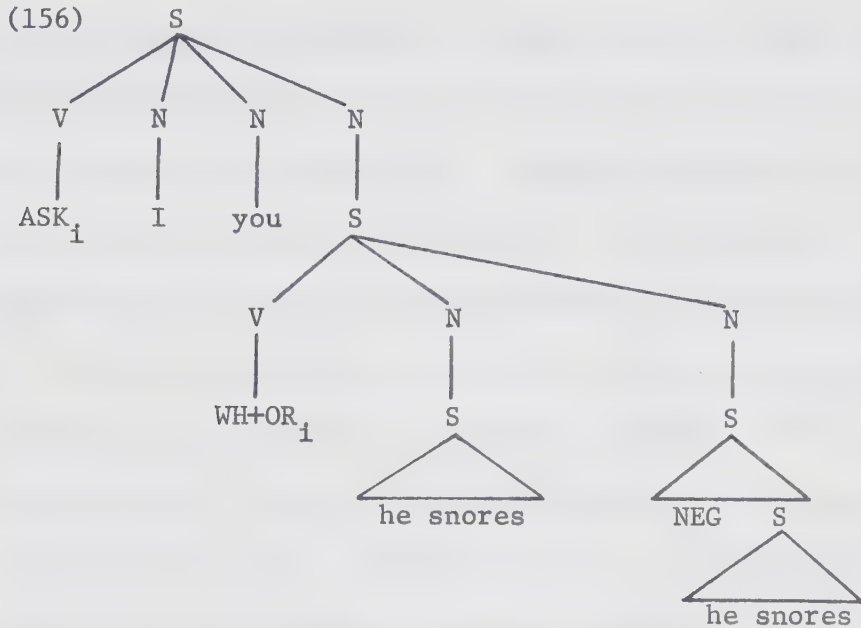
³⁶The following quotations from Langacker (1971) summarize the confusion surrounding the status of the underlying interrogative morpheme.

I wish to make no specific claim regarding the form of this higher clause - *I ASK you* is only an ad hoc representation. (p.4)

One reason [for choosing *I ASK you*] is that *Q* is totally ad hoc. (p.5)

(155) has the underlying structure (156).³⁷

(155) Does he snore?



The indexed *OP* then functions as a distributor of the semantic information contained in *ASK*.

There are several problems relating to this analysis. In general, it is extremely difficult to specify or even categorize in general terms the information contained in higher sentences. Secondly, it is not clear that the *OP* analysis is not a functional equivalent of the Katz-Postal *Q* + *WH* analysis. Thirdly, Baker's analysis of sentence (104 b) as containing an embedded question is not unassailable. It is from this analysis that an indexing system draws its motivation. Each of these problems will be discussed in the following chapter.

³⁷Langacker's notation has been modified here as follows. Langacker apparently accepts McCawley's (1970) argument that English is an underlying VSO language. He therefore represents *I ask you* as *ask I you*. Similarly the status of conjunctions as verbs requires that *WH* + *OR* be dominated by V.

2.12 Concluding observations

This chapter has examined the major proposals which have been put forth regarding the nature of interrogative structures as interpreted by generative grammarians. The major direction of development has been towards refining techniques for differentiating sentence types and for accounting for structural peculiarities of questions. Two major conclusions can be drawn from the discussion.

- I. Interrogatives feature an underlying morpheme which distinguishes them from all other kinds of sentences. They also contain a relational system which links the interrogative morpheme to specific elements in the rest of the sentence.
- II. The nature of the interrogative morpheme is in dispute. Katz and Postal proposed a *Q* which would have an interpretative reading "I ask you". Baker proposed that *Q* has segmental status and is either lexicalized as *if/whether* or replaced by WH words. Langacker rejects both of these positions and argues that interrogatives are defined as containing an indexed operator on a performative verb of questioning. He calls this verb *ASK*.

The following chapter examines some of the consequences of the latter position and argues against it.

CHAPTER III

PERFORMATIVES, INDICES AND THE INTERROGATIVE MORPHEME

	<u>Page</u>
3.0 Introduction	86
3.1 The complexity of performatives	86
3.2 Semantic considerations - internal problems	97
3.3 The world in an arbor	100
3.4 A grammar without performatives	102
3.5 Relatives and proforms	104
3.6 Relatives and embedded interrogatives	112
3.7 Indices and interrogatives	137
3.8 Conclusion	143

CHAPTER III

PERFORMATIVES, INDICES AND THE INTERROGATIVE MORPHEME

3.0 Introduction

Langacker (1969b), as we have seen, rejects both the performative *Q* and the segmental *Q*. In the place of *Q* he posits *OP* - an operator with the same indexing conventions as Baker's *Q*. This operator is itself an integer on the performative verb *ASK*. It is a cover symbol for the features associated with the abstract verb *ASK* to which the question formation transformations are sensitive. This chapter examines three of the problems connected with this conception of linguistic structure and concludes that performatives like *ASK* are a questionable addition to the discussion of grammatical phenomena. It concludes that indexed *OP* is a functional equivalent of the Katz and Postal *Q + WH* and thus unnecessary, and further that embedded interrogatives do not in fact provide any motivation for indexing conventions of the type required by Baker.

3.1 The complexity of performatives

If the characteristic feature of interrogatives is the presence of an indexed operator on a performative *ASK*, then we must examine performatives in general in order to understand the complexities at hand.

The term which Ross (1970) uses for higher sentences is

"performative". The term is borrowed from Austin (1962) who uses it to distinguish two types of statements, constatives and performatives.¹ Constatives are sentences like those in (1) which report information and are 'verifiable' in that they can be shown to be true or false.

- (1) a. Bananas grow in Iceland.
 b. Our cat is lost.
 c. We have three children.

Performative sentences are statements which have the following characteristics:

- a) they do not describe or report information and are not 'verifiable'.
 b) to utter a performative sentence is to perform the action of the verb.

Performatives always contain first person singular present indicative active verbs.² Examples of performatives are:

- (2) a. I name this ship the *HMCS Integrity*.
 b. I pick John. (as in choosing sides for a game)
 c. I order you to bring some firewood.

The sentences in (2) are not verifiable: they are not 'true' or 'false'. They are only appropriate or inappropriate.

Austin stipulates this condition as follows:

¹See above Chapter II, sec. 2.7 for some discussion of this dichotomy.

²These conditions are drawn from Austin (pp.4-6). Ross (1970) expands these grammatical requirements to specify that performative verbs are verbs of linguistic communication such as *ask*, *declare*, *say*, *request* and so on. See sec. 2.72 of Chapter 2 for detail.

Speaking generally, it is always necessary that the *circumstances* in which the words are uttered should be in some way, or ways, *appropriate*, and it is very commonly necessary that either the speaker himself or other persons should *also* perform *other* actions, whether 'physical' or 'mental' actions or even acts of uttering further words. (p.8)

...the words must be spoken 'seriously'. (p.9)

The appropriateness condition applied to the sentences in (2) would require circumstances something like those outlined in (3).

- (3) a. For sentence (2 a) the person uttering the sentence must be someone vested with the authority to name ships and the name intended for the ship must be *HMCS Integrity*. Furthermore the time and location in which the sentence is uttered must be that which is determined by various external criteria. For example, (2 a) can occur appropriately only at a launching site and only in a specific ceremonial context. The launching site and ceremonial context are in turn related to phenomena in the physical world (e.g. a large body of water) or to the cultural structure of the participants (e.g. ship launchings and christenings are ceremonial procedures which have social, political and economic repercussions and constraints).
- b. Sentence (2 b) is appropriate only if uttered by someone who has the authority to choose members of a team, and only if the person designated (i.e.

the grammatical object) is in fact a member of the set of possible members for a team. 'John' cannot be exempted from participation through his own volition or through extenuating circumstances such as his being restricted to a wheelchair when the game in question is tennis. That is, he must be an appropriate recipient (object) of the performance designated in the sentence.

As for the person uttering sentence (2 b), the authority which he has must be previously agreed to by all the members of the set of possible candidates. Under usual practice the speaker cannot be one of the players and John the captain. If unusual or extraordinary procedures are to be employed these must be specifically agreed upon (and would probably involve considerable debate because of the nature of their deviation from standard cultural practices).

As is true for (2 a), (2 b) must be uttered at appropriate times and locations.

3. The performative order in (2 c) also has specific circumstances in which it is appropriate, circumstances which are similar to those outlined in (3 b). The person to whom the sentence is directed is the addressee. The addressee must be in a position to accept the authority of the speaker.

Austin (p.28) gives the example of a shipwrecked captain and a sailor stranded on an island. The sailor may choose not to accept the authority of the captain whose utterance of (2 c) would therefore be inappropriate.

The last two examples have especially clear connections to linguistic phenomena: they require precise specification of the relationship between the speaker and the addressee.

Sampson (1969) has argued that it is possible to predict familiar and formal pronoun usage in Chaucerian English on the basis of observable social phenomena such as seating arrangements, clothing styles and occupational status and the relative hierarchical ordering between members of the social group which these phenomena reflect. If Sadock (1969b) is correct in asserting that higher (abstract) sentences are the source of familiar and formal pronoun selection in languages, then the type of information incorporated in the higher sentence is precisely that information which Sampson has found relevant for Chaucerian English. The felicity conditions which Austin attaches to performatives depend on information of the same type. There are then two distinct aspects of language involved. On the one hand there is a grammar of linguistic elements which provides sets of possible grammatical strings. On the other hand there is a conceptual framework which encompasses a "grammar of usage". This framework specifies among other things appropriateness conditions for the use of sentences. These conditions state whether a particular grammatical sequence is appropriate in the communicative

context. The hypersentence (or performative) is a mechanism for relating general information from the conceptual framework of the individual to his grammatical (linguistic) structure.

R. Lakoff (1969, 1970) has pointed out instances in which it is necessary to explicitly specify presuppositions³ in order that the grammar provide contextually appropriate sentences. That is, part of the description of a sentence is its appropriateness as it relates to the environment in which it is uttered. A sentence like "She is washing her face" is unexpected as a response to "What is Mike doing?" if only because the pronouns *she* and *her* cannot normally refer to *Mike*. The first example which Lakoff uses to support her position is the *some* ~ *any* alternation in English, in (4).

(4) a. Who wants some beans?

b. Who wants any beans?

Of this alternation she says:

In questions of certain types, the use of *some* implies that the speaker hopes for, or at least anticipates, a positive answer; the use of *any* implies the expectation of a negative answer, or at least a neutral feeling on the part of the speaker.... If there is a rule determining the distribution of *some* and *any*, it must take these presuppositions into account. (R. Lakoff, 1969:612-613).

Concerning the same alternation she states: "It is difficult to see how this could be predicted...without performative abstract

³Presuppositions are thoughts, beliefs, knowledge and other similar factors which influence the meaning, interpretation and understanding of sentences. For a discussion of the use of presuppositions in philosophy and linguistics see Garner (1971).

the end of the meal, or the beans are distasteful
or any number of other reasons.

If the sentences of (4) are uttered in the reverse circumstances of (5), then some "confusion or misunderstanding will result". For example, if sentence (4 a) is uttered in circumstances (6), the interpretation might be that the speaker is joking.

(6) It is fall and the garden plants have frozen. The bean plants still had unpicked beans on them when they froze. It is the middle of the afternoon and the speaker extends, towards a second person, a handful of dead bean plants which have mushy, mold covered bean pods hanging from them and says "Who wants some beans?" even though he expects that no one will.

Lakoff anticipates that the pairing of circumstances (presuppositions) such as (5) and (6) with (4) will be carried out by the performative verb. It is further assumed by Ross (1970) and others that abstract sentences are part of the grammar of linguistic elements.

If social, cultural and physical phenomena are specified in the grammar, then the grammar must have some means of interpreting these circumstances so as to determine the appropriate linguistic reflections of the "non-linguistic" conditions. For example, in order to determine pronoun usage in languages such as Chaucerian English or modern French, the grammar must have some built-in device which is sensitive to the status of the addressee and which can evaluate,

in terms of a hierarchy, the status of both the addressee and the speaker. The result of the evaluation procedure is fed into⁴ the structural feature system of the "performative", or "hyper-sentence" or whatever mechanism it is that operates on sentences to produce felicitous and appropriate utterances⁵.

Bright (1968) discusses the relationships between various cultural factors and cites Goodenough who contends that individual cultural factors can only be understood as part of larger cultural structures. If the circumstances and presuppositions of (5) and (6) are to be employed by the grammar which generates the sentences of (4), then the performative verb will have to provide a major link to all of the cultural behavior which has traditionally been termed extralinguistic.

From the arguments just sketched it becomes clear that the grammar of usage must contain on the one hand at least a socio-sensor, and a socio-evaluator, on the other a component made up of syntax, lexicon and phonology, and some means of relating the two. In effect the entire conceptual framework of the individual is

⁴The terminology "fed into" is not intended in any specific way. The concept is that the results of the socio-evaluator must be made accessible to the sentence production scheme in some way.

⁵The picture is further complicated by the fact that speakers can deliberately produce inappropriate pronominal forms for jocular, offensive or other reasons. Speakers can also deliberately produce infelicitous utterances with known effect and consequences. Presumably, the grammar must also specify these phenomena because they may be associated with particular intonation patterns or other overt linguistic signals.

required by his grammar. Features which are determined by the sociocomponents have been assigned to performatives in recent tradition.

Gumperz and Hymes (1972:36) in the editorial preface to Hymes (1972), say:

Rules of speaking are the ways in which speakers associate particular modes of speaking, topics or message forms, with particular settings and activities ... there is almost no systematic information on such matters. What ethnographic information we have suggests considerable cross-cultural variation in rules of speaking. Yet the range of this variation and its relation to social structure and linguistic form is as yet unknown.

Labov (1970:54-55) comments in a similar vein

Commands and refusals are actions; declarations, interrogatives, imperatives and linguistic categories - things that are said, rather than things that are done. The rules we need will show how things are done with words and how one interprets these utterances as actions: in other words, relating what is done to what is said and what is said to what is done. This area of linguistics can be called "discourse analysis"; but it is not well known or developed. Linguistic theory is not yet rich enough to write such rules, for one must take into account such sociological, non-linguistic categories as rights, roles, and obligations.

One can reasonably conclude from these observations that linguists are not yet in a position to formalize the link between linguistic grammars and conceptual frameworks. Since performatives function as links of this type they may well be premature formulations. In fact it may be the case that linguists have reached a general plateau in their ability to formalize models of linguistic behavior. Research aimed at disclosing information relating to grammars of usage would assist in the evaluation of structures like performatives as well as provide a check on narrower linguistic descriptions.

In this regard Hymes (1972) supplies some tentative categories of situations in which speech occurs and posits a number of factors in the communicative context which have overt manifestations in speech acts. In his presentation (1972:57) he contends that performative structures of the type "I hereby X you to ..." are basically incorrect for two general reasons. One is that sentences with the overt form (7) can be interpreted as (8).

(7) Would you like to take the slow class?

(8) Take the slow class!

If the performative verb is the source of both the semantic information and the linguistic signal (syntactic configuration) then the underlying source of (7) and (8) embodies a paradox: the governing verb is both interrogative and imperative.

Hymes further points out that some language systems (cultures) do not make use of the dyadic division inherent in the performative scheme. These systems refer not only to the speaker and addressee but may also refer to hearers other than the addressee, and so on. The position is summed up as (Hymes 1972:58-59):

In short, serious ethnographic work shows that there is one general, or universal, dimension to be postulated, that of *participant*. The common dyadic model of speaker-hearer specifies sometimes too many, sometimes too few, sometimes the wrong participants.

Since both Ross and Sadock intended their proposals for abstract sentences to be part of linguistic metatheory, these proposals would have to be modified considerably to accommodate these objections.⁶

⁶For numerous references to literature relating to the matters discussed above see the bibliography in Gumperz and Hymes (1972).

3.2 Semantic considerations - internal problems

Underlying the attempts at specifying performatives is the assumption that the underlying structural level in linguistic descriptions is semantic and that analysis to a level of 'semantic primes' is desirable. This framework anticipates that the semantic primes assume structural relations such that they can be represented in branching trees (Morgan 1969:50). Furthermore it is assumed by at least some linguists (Morgan 1969:54) that the internal structure of semantic representations is *psychologically real*.

Morgan defends this position by stating that "any theory of semantics which does not claim some sort of psychological reality for its constructs is sterile, little more than a game of how-language-would-work-if-I-designed-it." But the assertion of such a statement does not constitute proof of it.

Gallagher (1970) has outlined several objections to this framework. She points out that by simply asserting that semantic primes and psychological reality are identical it is possible to miss differences as well as to notice similarities. A strong assertion can therefore be as sterile as no assertion. Furthermore, if the assertion is to be given the status of an assumption in linguistic arguments, independent tests must demonstrate a connection between the semantic and psychological minimal units.

Such tests would require the specification of semantic primes⁷

⁷This, at least, would be the task primarily of linguists and others interested in the nature of language as it occurs detached from psychological, physiological and other biologically oriented considerations.

In principle, however, it is not possible to do so. If the conditions on usage provide part of the meaning of words,⁸ then an exhaustive list of such conditions is required to fully account for meaning. The world, in its manifold aspects, is constantly changing and exhaustive description of existing and possible conditions is not feasible. Furthermore, there are words like *assassinate* which can be systematically paraphrased as (9).

- (9) assassinate: to kill someone of political importance with malice aforethought for the purpose of political gain. The victim may not be a close relative but he must have a higher social rank than the person committing the act. The act must occur in a public place or at a public event.⁹

Each of the conditions specified in this definition is subject to infinite variation. There are infinite gradations of social rank, importance and political purpose.¹⁰ It is therefore impossible on general grounds to exhaustively specify semantic primes.

A second argument against the assumption that semantic representations (i.e. trees) are exhaustive is that the so-called semantic representations are really only definitions, which themselves rely on certain a priori knowledge before they are understood.

⁸Section 3.1 above makes this suggestion more than conjecture.

⁹This definition is a synthesis of Gallagher's discussion.

¹⁰This example is taken from Gallagher. She attributes original use of it to C. J. Fillmore.

For example, the semantic representation of *kill* is often stated as *cause to become not alive*. Since this semantic representation can only be understood through identification of the clues supplied by each of the constituents in [CAUSE [BECOME [NOT [ALIVE]]]], it is easy to see that it is nothing more than a general definition- and NOT a specification of semantic primitives.¹¹

From this arises the third obstacle in the quest for pristine semantic units. Whenever a definition is given, it is possible to request a more precise definition. Sentence (10) can have the paraphrase readings (11), (12) and (13), as well as others not detailed here.

(10) John opened the door.

(11) John caused the door to become open.

(12) John did something that caused the door to become open.

(13) John performed an action the result of which was that the door ceased to be closed.¹²

Gallagher concludes from all these arguments that it is

¹¹Fodor (1970) has argued that *kill* does not derive transformationally from *cause to die*. His arguments deal with 1) the ordering of lexicalization and a "do so" rule, 2) intrinsic constraints on verbs with respect to time adverbs, and 3) instrumental adverbials. If *kill* is not a lexicalized version of *cause to die* then the latter is inappropriate even as a definition of *kill*.

¹²Gallagher provides only (10)-(12) as paraphrases, after which point she assumes some nonlinguistic "explanatory" activity will ensue. That is, at some point in the explanation of (10), the 'explainer' will demonstrate, by way of example, what is meant. (He may also do more drastic things, depending in part on his frustration level, etc.)

impossible to specify what semantic primes are and whether or not they are psychologically real. If performatives are formal devices designed to introduce semantic and psychological features into the grammar, it can then be concluded that when they do so their success is accidental rather than a manifestation of the general viability of their structural properties.

3.3 The world in an arbor

In the two preceding sections it has become increasingly evident that a great deal of non-linguistic information is required for the proper functioning of a grammar. Yet the conclusion that non-linguistic information cannot itself be incorporated into grammar is also becoming increasingly evident.

Discussion of this problem will require a set of definitions. In the last fifteen years the term "grammar" has come to be applied to that system of operations which specify the relationships between meaning and speech sounds. This definition is relatively vague and hence noncontroversial. The usual implication is that operations take the form of a set of rewrite rules which produce a categorized structure (or labelled string) upon which transformational rules operate to change order, delete repeated items, insert predictable items and, finally, to interpret the strings into phonetic sequences. These operations deal either with elements which can be observed in speaking (phonetics) or for which there is indirect evidence which can be seen when comparing various speech acts (sentences, and the

like) and observing systematic correspondances. Each of the elements is given formal status as a member of a set and certain of the operations in the grammar are limited to specified sets, or subsets.

For the purposes of this discussion the nonlinguistic information can be grouped under the term "performative" since it is abstract performative sentences which have been proposed as the introducers of this information into grammars. This performative information encompasses all of the social, psychological and cultural information specified in the various examples in sections 3.1 and 3.2 above. The socio-sensor, evaluator and the like, do not participate in grammars in the way in which phonological, morphological and syntactic elements do. That is, in sentence (14), each of the words participates in specific formal relationships to the others.

(14) a. [lɛts dræiv ərəʊn təʊn]

b. Let's drive around town.

The grouping (structure) of these words delivers a general meaning: the suggestion that the speaker and addressee(s) undertake a particular activity. This structure does not however, form definite relationships to units of social behavior, personal emotional commitment or cultural acuity. It is certainly possible to interpret a sentence like (14) in various ways and to thereby glean certain information about the speaker from it. For example, given the activity suggested, one might decide that the speaker is young, that he lives in a small town and that he has an old car and is bored on a Saturday afternoon. Or the diphthongs might indicate that the speaker was Canadian, from Martha's Vineyard or

some other specific location. All of these factors are what Martinet (1964:54) calls the expressive function, and while they are closely linked to language and use, they are not part of the grammar proper. That is, they do not directly influence the syntactic configurations or the general phonological properties of the string.

3.4 A grammar without performatives

If performatives are not included in grammars, then the presuppositional differences between (15) and (16) must be specified elsewhere than in the syntactic grammar. The underlying grammatical

(15) The girl I met speaks Basque.

(16) A girl I met speaks Basque.

The underlying grammatical structures will differ in the features attached to the determiner node, but there will be no indication of the origin of this distinction. Since [$\pm$ definite] derives from the extralinguistic knowledge of the speaker and the speaker's beliefs about the knowledge of the hearer, all of these factors would have to find specification in the grammar if the source of the determiners were provided. As was shown above, this involves the task of providing an exhaustive socio-bio-cultural account of each individual speaker who is constantly changing in a fluid environment. Equivocation at this point on the basis of supposed competence-performative distinctions in an ideal *community* of speakers (Chomsky 1963:3) is misguided because "presuppositions" and "performatives" are inherently ego-centric constructions and refer not only to community practices but

to individual manifestations of particular cultural objects. The following quote from Lakoff (1971) is illustrative:

...for many sentences it makes no sense to ask whether or not they are grammatical in any absolute sense, but only to ask whether they are grammatical relative to certain presuppositions. For example, in reciprocal contrastive stress constructions:

(17) Jóhn insulted Máry and then shé insulted hím.

(18) *Jóhn praised Máry and then shé insulted hím.

(19) Jóhn called Máry a virgin and then shé insulted hím.

The pronouns on the right can be stressed in (19) only if it is presupposed that to call someone a virgin is to insult that person. (18) is judged ungrammatical since by the definition of *praise*, praising someone cannot be an insult, at least not in our culture.

The condition of (18) belongs to the community. The condition on (19) belongs to an individual or, at most, a very small "in group" in the same way as (6). (If this is the case, then sentences like (18) could be taken as identifying criteria). The linguist then faces a dilemma. The grammaticality of these sentences (17)-(19) depends upon "extralinguistic" information, and that information ought to be specified somewhere in the grammar. At the same time, linguists are as yet not ready to construct grammars of usage or to provide a structural description of the necessary "nonlinguistic" information. In order that the investigations of linguistic (syntactic) structure may continue in the face of these difficulties the following convention is adopted in this thesis: if and when syntactic configurations clearly require presuppositional information, that information is in fact available. The source of such information is unspecified. This convention implies recognition of the lacunae in the orientation of the linguistic description and

thereby makes the analysis more readily subject to modification given appropriate correlations to non-linguistic factors.

Performatives as defined above are thereby made redundant. Langacker offers no independent motivation for his performative analysis of *Q* (i.e. he offers no general justification of performative analysis). Given their redundant status and their lack of motivation, performatives should be excluded from grammars. In particular, it will be demonstrated below that interrogative structures can be described without the additional machinery introduced by performatives.

3.5 Relatives and proforms

In Chapter II, sections 2.8 and 2.9, Baker's position on embedded interrogatives and the consequent implications for a segmental interrogative morpheme *Q* were discussed. The same arguments led Baker (and Langacker) to suppose that the interrogative morpheme was keyed to various nodes lower in a P-marker by a system of indices.

The analysis of sentences like (2.104 b)¹³ as containing embedded interrogatives depended on the demonstration of their shared properties with (2.104 a) but not with (2.104 c).

(2.104) a. What did Albert buy?

¹³The examples in this thesis are numbered independently in each chapter. References to examples other than those in a current Chapter are preceded by the chapter number. Thus (2.104) refers to example (104) of Chapter II.

b. Alice didn't know what Albert bought.

c. Alice didn't wash what Albert bought.

The demonstration rests on whether or not *what* in (2.104 b) is an interrogative word. Relative pronouns and interrogative words in English, and other languages such as French, have superficially similar forms. An uncontroversial assumption is that *what* in (2.104 a) is an interrogative word. Baker argues that *what* in (2.104 b) is also an interrogative word but apparently (though he never says so) considers *what* in (2.104 c) to be a relative pronoun.

Relative pronouns occur in the following sentences:

(20) The man *who* drives a red car just went by.

(21) The dog *that* I bought last week died.

(22) The book *which* she read is lost.

(23) Alice saw the man *who* came.

(24) Alice washed the things *that* she bought.

In each of these sentences the clause introduced by the relative pronoun modifies or in some way specifies certain information about the preceding noun. Each of these sentences could be divided into two or more simple sentences. For example, (20) could be presented as (25).

(25) The man just went by. The man drives a red car.

If (25) is to have the same meaning as (20), then both occurrences of the phrase *the man* must refer to the same person. That is, they must be coreferential. Since a similar relationship can be shown to exist between each of the sentences (21)–(24) and a corresponding set of simple sentences, for convenience we can

assume that a set of simple sentences is the basic structure for relative clauses. Some procedure which attaches the modifying sentence to the head noun in the main (matrix) sentence must now be invoked. This procedure will be called relativization. Relativization identifies two coreferential noun phrases in each of two separate sentences and changes one of these NPs into a relative pronoun. Thus, the second occurrence of *the man* in (25) becomes *who* in (20). Another transformation moves *who* and the clause in which it originated to a position following the left member of the pair of coreferential NPs.

The underlying sentences of (23) would, under these assumptions, be (26).¹⁴

(26) Alice saw the man. The man came.

Thompson (1971) proposes that relative clauses are derived from conjoined sentences. This suggestion is followed here. In (23) and (26) the phrase *the man* refers to a highly specific entity. The phrase represents numerous semantic units (features) which are combined in a unique way to refer to a determined adult male human. Suppose that the presuppositional (i.e. extralinguistic) information which allows this detailed specification is either missing or irrelevant. That is, suppose the detail of *the man* were not given, but only a more general percept such as *person* were required in the

¹⁴It is arbitrarily assumed that the order of embeddings is left to right. The same two sentences as in (23) obviously also yield *The man, who Alice saw, came.*

specific communicative context. Then a conjunction of sentences like that in (27) could replace (26).

(27) Alice saw the person. The person came.

If relativization applies to (27), then sentence (28) results.

(28) Alice saw the person who came.

There are sentences like (29) in which the clause *who came* is superficially, at least, identical to *who came* in (23) and (28).

(29) Alice saw who came.

The difference between (23) and (28) on the one hand and (29) on the other is the absence of a full object NP in the latter. It was stated above that (23) and (28) differ in the detail of the real world referents present in the object NP, *the man* and *the person* respectively. Sentences (28) and (29) differ in a similar respect. However, these latter two can exist in a paraphrase relationship: sentence (29) does not convey any information not present in (28), and (28) explicitly supplies just that extra information described by the phrase *the person* which is "understood" in (29). If (28) and (29) are equivalent in meaning, and if (28) contains a greater number of linguistic symbols, then it must contain redundant elements. Furthermore, if (29) is a paraphrase of (28) and if (28) contains redundant elements not present in (29), then, using usual linguistic argumentation, it can be said that (29) derives from (28).¹⁵ This

¹⁵Or, at least it can be said that (28) and (29) both derive from the same source with an intermediate stage something like (28) in the derivation of (29).

derivation is, then, brought about through the deletion of the redundant elements.

If there exists a transformation to derive (29) from (28), then it must be ordered after the transformations which derive (28) from (27). The two sentences in (30) can be relativized to (31).

- (30) a. I saw the man.
b. The dog bit the man.

(31) I saw the man who the dog bit.

The word order in (27 b) is subject-verb-object (SVO). As a relative clause in (28) this order has changed to *WH* + OSV. Therefore two changes have occurred: *WH* has been attached to the object NP (*WH* attachment) and the node so modified has been moved to a position immediately following the left member of the pair of coreferential NPs (*WH* attraction). If one of these transformations occurs, the other obligatorily does so too. The ungrammatical sequences in (32) indicate this cooperation.

- (32) a. *I saw the man the dog bit who.
b. *I saw the man the man the dog bit.

In addition to (31) it is possible to derive (33) and (34) from (30).

- (33) I saw the man the dog bit.
(34) I saw who the dog bit.

In (31) *who* appears in the usual *WH* shape. It also appears in the usual position of relative clauses. Therefore the transformation which deleted the nonrelativized coreferential NP (antecedent deletion) must

apply after *WH* attachment and *WH* attraction. If antecedent deletion (ANT-DEL) applied *before* the relativization transformations, there would be no coreferential NP: hence no *WH* attachment. Nor would there be any *WH* attraction because there would be nothing to attract it.

In both (33) and (34) a repeated element has been deleted. This deletion is optional and may be a function of stylistic criteria. When nothing is deleted, one of the redundant elements in a conjoined set of simple sentences is relativized. Identical rules, then are required to derive (29) and (34) from respective pairs of simple sentences. Although in (29) it is the subject which relativizes and in (34) it is the object.

The sentences in (35) will not form a single sentence with a relative clause.

- (35) a. Alice saw the dog.
b. The horse grazed in the field.

Attempts to do this such as (36) do not provide the same information.

- (36) Alice saw the dog that grazed in the field.

One of the conditions of relativization stated above was that there must be two coreferential noun phrases. It is because this condition is not filled by (35) that (36) is an impossible derivative of (35). This point raises a problem about the identification of coreferents. All examples used to this point have been fairly straightforward. Does, however, (37) underlie (38)?

- (37) a. Alice recognized the person.
b. The man sang.

- (38) Alice recognized the person who sang.

Given appropriate circumstances, it is quite likely that it does. Given the associated presupposition "The person is/was a man," (38) provides an appropriate paraphrase of (37). On the other hand, *the person* can have a referent specified as *the boy, the little baby girl, the young man, the old lady, the madame*, and so on. *The man* in (37 b) can also have a similar (though more restricted) range of possibilities. What delineates these possibilities to permit (38) is the extrasentential information known to the speaker and how he conjoins this information to the semantic and grammatical mnemonics present in the sentence. There are therefore at least a few features shared by *the person* and *the man* in (34). A grammar which can characterize the derivation of (38) from (37) will have access to these features. These features will then become formal devices, ultimately derived from the speaker's extensive knowledge of his world. One of these features will be *human*.

In the pair (37) and (38) it would seem that a < + human > specification in the NPs in question would be sufficient to allow coreference. Nevertheless, sentence (40) cannot derive from (39) even though this condition is met.

(39) a. The man saw the madame.

b. The lady rang the doorbell.

(40) The man saw the madame who rang the doorbell.

In fact *the madame* and *the lady* share more information than < + human >. They are both at least < + female > and < + adult >. Relativization is prevented by the presence of other features, namely the presupposition

"A madame is not a lady." Although *person* can be reduced in scope to *man* or *man* enlarged to *person*, *madame* and *lady* occupy mutually exclusive conceptual ranges in the cultural scheme of many speakers. The bizarre nature of (36) "Alice saw the dog that grazed in the field" then results from whatever is odd about the presupposition "dogs graze" which is implied by (36).

On the meager, but clear, evidence of these two examples it can be affirmed that there is a certain minimal sharing of features required but that the sharing is in no way a fixed quantity. *Person* is a cover term or proform for a number of individual NPs, and given an appropriate assumption about the identity of the object identified by the proform, coreference with fully specified NPs is possible. That is, if, given two statements one of which contains a proform and the other contains a noun phrase, the statement "NP is a possible member of the set defined by the proform" is a true statement, then coreference is possible and transformations depending upon coreference can apply.

This hypothesis reveals that although antecedent deletion (ANT-DEL) apparently deletes nonrecoverable information (viz. the antecedent NP), that information is in fact reconstructible to a certain point: a surface relative pronoun with no apparent antecedent derives from a sequence of proform plus NP with a coexisting presupposition that NP is a possible member of the proform. It is the associated presupposition which is important because while *man* might refer to a large number of proform-like categories such as *person*, *human being*, *adult male*, *primate* and so on, *lady* cannot

refer back to a proform like *madame*. That the relationships involved in the presuppositions are intricate is shown by the fact that both *madame* and *lady* can refer back to *person*, *adult female* and so on but they cannot refer to each other. Since proforms by definition do not provide exhaustive specification of any single possible member of a set (i.e. they are multiply ambiguous) only the presupposition "NP is a possible member of Pro_1 " must be true to allow recoverability of the proform. Sentences (29) "Alice saw who came" and (34) "I saw who the dog bit" do not therefore violate the Katz-Postal constraint on meaning preservation if they derive as relatives.

3.6 Relatives and embedded interrogatives

Under the proform hypotheses sketched above a sentence like (41) could have an underlying conjunct set like (42) where LOC is the proform for locatives.¹⁶

(41) This is where he died.

(42) a. This is LOC.
b. He died LOC.

This position is by no means uncontroversial. Katz and Postal (1964: 129) attempted to extend their proposed underlying *WH* in interrogatives to relatives as well. Koutsoudas (1968:267) provides a concise statement of certain facts making such an analysis undesirable. The *WH* words in the pairs of interrogative and relative structures in (43)-(47)

¹⁶Koutsoudas (1968:270) uses *place* as a proform for locatives.

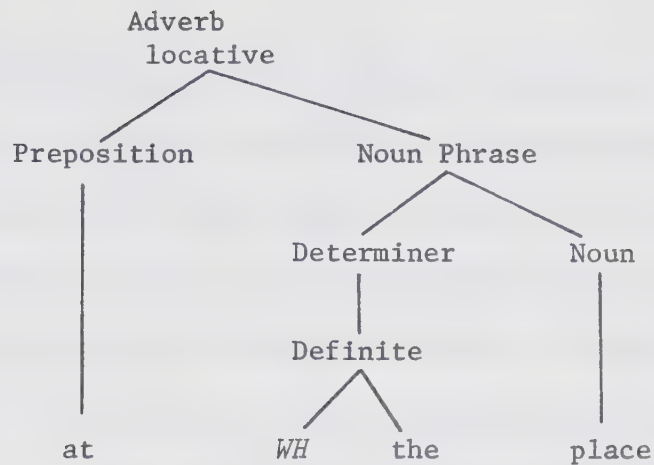
show identical forms and related meanings.

- (43) a. *Who* cut the pie?
 b. The man *who* came yesterday cut the pie.
- (44) a. *Where* is the car?
 b. This is *where* I left it.
- (45) a. *What* did Jim eat?
 b. He ate *what* we gave him.
- (46) a. *Which* show did you see?
 b. We went to one *which* was good.
- (47) a. *When* did you come home?
 b. We came *when* we were ready.

Katz and Postal (1964:129) contend that the surface differences between the sentences in (48) are reflected in the P-markers (49), (50) and (51).

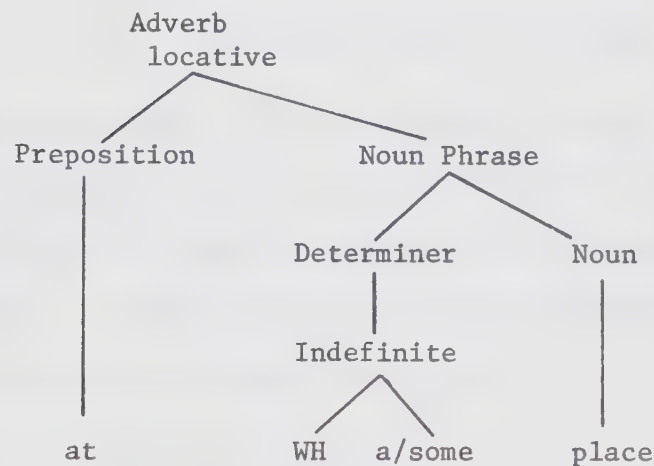
- (48) a. At *which* place does John drive?
 b. *Which* place does John drive at?
 c. At *what* place does John drive?
 d. *Where* does John drive?
 e. *What* place does John drive at?

(49)



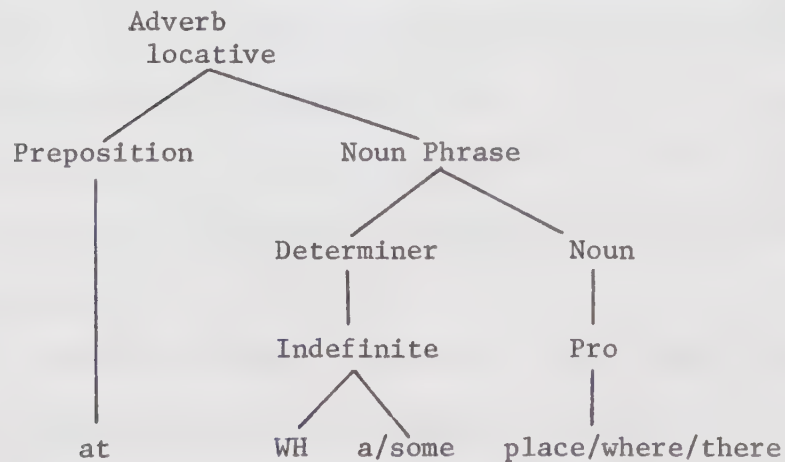
at which place, which place... at (i.e. 48 a and 48 b)

(50)



at what place, what place ... at and maybe
the place John ... (i.e. 48 c and 48 d)

(51)



where, where ... at (i.e. 48 d)

That is (49) with *WH* attached to a definite determiner yields *which* (*place*) in surface structure, while (50) with *WH* attached to indefinite *a/some* yields *what* (*place*). When, as in (51), *WH* + indefinite *a/some* precedes a locative proform, *where* is derived. These derivations imply a distinction between (52) and (53).

- (52) a. I know the place at which John lives.
 b. That's the place at which John drives.
- (53) a. I know the place where John lives.
 b. That's the place where John drives.

Koutsoudas (1968:270) contends that (52) and (53) are not different in meaning and that the implied distinction between definite (53) and indefinite (52) which is entailed by the Katz-Postal derivation is mistaken. He further contends that the Katz-Postal derivation attributes proform status to *house* in (54 b).

- (54) a. Where did he die?
 b. Show me the house where he died.

That is, if *where* in both (54 a) and (54 b) is derived from *at* + *WH* + *some* + *place/where* (i.e. 51), then relativization is only possible if *house* in the matrix clause is dominated by *Pro*. If it is, then all NPs which can be relativized in principle can have both *Pro* and independent noun status. If *house* is a proform, then (54 b) would have an underlying structure like (55).

(55) Show me the house. He died at + *WH* + *some* + *place/where*. This structure implies that one of the possible members of the proform *house* is *at* + *WH* + *some/place*. Such a claim

is intuitively mistaken. The reverse claim that *house* is a member of the larger category *some + place/where* would be in keeping with the definition of a proform as a cover term for a number of individually specifiable items. That is, in order for (55) to underlie (54 b) the associated presupposition " 'some place' is a member of the set summarized by HOUSE" must be true while the opposite presupposition " 'house' is a member of the set SOME PLACE" is more likely to be true.

Such conditions would make (56) the effective underlying sequence of (54 b).

(56) Show me the house. He died at/in + *WH* + *some* + house. It is not possible for *at/in + WH + some + house* to underlie interrogative *where* in (54 a). Since, in order to meet the conditions of relativization, the underlying structure is different from that required for interrogatives, (51) is not the proper structure for relative *where* in (54 b), although it is for interrogative *where* in (54 a). Therefore, interrogative and relative *where* are not identical.

Given the independent origins of the relative and interrogative *WH* words, there arises a problem about the status of *WH* in (49)-(51). The role of *WH* in interrogatives was to specify the questioned element. There seems to be no good reason, to this point, to contest this proposal. It is pointed out in UESP (1968:630) that *WH* in relative clauses is always predictable.¹⁷ If *WH* is predictable for

¹⁷For other arguments relating to separate origins for *WH* in interrogatives and relatives see UESP (pp.630-632).

relatives then it is recoverable from the surface structure. There is then no need to introduce a relative morpheme in underlying structures. Relative *WH* should be introduced transformationally. The *WH* of interrogatives is not, however, predictable and must be present in some way in the underlying structure. Relative and interrogative words then have separate and independent sources.¹⁸

It should not be surprising that relatives and interrogatives are unrelated. Benveniste (1957) examined relativization in Ewe, Tunica, Navaho, Chipewyan, Sumarian and various Indo-European languages. He gives no indication that relativization is in any way connected with interrogation. He concludes that relativization is in general a modifying procedure whereby a noun in what is now called a matrix sentence is qualified by an embedded sentence. Languages have various means of showing the relationship. It is clear that this notion of relativization is related only very remotely to the concept of interrogation predominating in generative transformational linguistics, namely that a question requests the specification of additional (semantic) information about some unspecified element.

The independent source for interrogative and relative *where* supports the proposed derivation of (41) "This is where he died" using underlying proform LOC as a locative which relativizes to *where*. This position extends to *who* in (34) "I saw who the dog bit."

The claim that *who* in (34) is a relative is in opposition to Baker's (1970) position that it is an embedded interrogative word.

¹⁸I am indebted to Gary Prideaux for discussion of these points.

Baker argued on the basis of six sets of examples that *who* in (32) is an embedded interrogative. The examples showed parallel behavior between questions and the supposedly embedded questions. Baker's first supporting example (p.198) is a contrast of the sentences (2.105 b) and (2.105 c).¹⁹

- (2.105) a. Why did Albert buy it?
 b. Alice didn't know why Albert bought it.
 c. *Alice didn't wash why Albert bought it.

In these examples, as in each of the others given here, the (a) sentence is a question and the (b) sentence is a grammatical declarative with certain superficial similarities to the interrogative (a) sentences. The (b) sentences contrast with the ungrammatical (c) sentences by those superficial features which are similar in (a) and (b). The conclusion then is that the (b) sentences share an underlying property, namely *Q*, with the (a) sentences.

The present position claims that *why* in (2.105 b) is a relative pronoun in the following way. The two sentences in (57) can be relativized to (58).

- (57) a. Alice didn't know the reason.
 b. Albert bought it for a reason.
 (58) Alice didn't know the reason why Albert bought it.

The reason in (58) is then deleted by ANT-DEL, yielding (2.105 b).

¹⁹The sentence numbers employed here are those used in Chapter II, sec. 2.8 of this thesis.

If *why* is a relativized version of *for some reason* (where *some* is a proform for determiners), then the ungrammaticality of (2.105 c) is explained by the fact that *wash* cannot take *reason* as an object.

(59) *Alice didn't wash reason.

Similarly, each of the sets (2.106)–(2.108) can be re-analysed. Sentence (2.106 b) can be analysed as (60).

- (2.106) a. Whose dog did Albert buy?
 b. Alice didn't know whose dog Albert bought.
 c. *Alice didn't wash whose dog Albert bought.
- (60) a. Alice didn't know [THE IDENTITY OF SOMEBODY].
 b. Albert bought [SOMEBODY'S] dog.

The notation of the proform [THE IDENTITY OF SOMEBODY] in (60 a) is intended to indicate that Alice didn't know the identity of some particular person specified in (60 b). (60 a) does not mean that Alice was not acquainted with the person in question, but rather that she was unaware of the relationship between that person and Albert. This relationship is outlined in (60 b). If this is so, then (60 b) modifies (60 a) in a direct way and (60) will relativize to (61).

- (61) Alice didn't know [THE IDENTITY OF SOMEBODY] whose
 dog Albert bought.

The sequence in (61) is superficially bizarre because of the difficulty in English of spelling out the semantic concept related in (60 a). If ANT-DEL applies to (61), then grammatical (2.106 b) results.

This derivation has the satisfying consequence of stressing

the ambivalent object of Alice's knowledge: she may know the person, or she may not, but assuredly she does not know the name of the person specified in (60 b), for if she did know his name, then (60 a) would be impossible. That is, if the person who formerly owned the dog was named Bill and if Alice knew that, then she would know whether or not she was acquainted with him and (2.106 b) would be an inappropriate utterance, while (62) would be appropriate.

(62) Alice didn't know Bill, whose dog Albert bought.

Thus, when the object NP of the matrix clause is specified, a non-restrictive relative clause results. The extra information disambiguates the verb *know* in just the way (60 a) predicts.

The ungrammaticality of (2.106 c) results from the condition that *wash* always takes a concrete noun as object, as shown in (63).

- (63) a. Alice washed her hands.
 b. Alice washed herself.
 c. *Alice washed her ideas.
 d. *Alice washed the Trinity.
 e. *Alice washed identity.

Since identities cannot be washed, (2.106 c) is ungrammatical because of the co-occurrence restrictions between *wash* and its objects. The ungrammaticality is not due to *whose* being an interrogative word as it is in (2.106 a). *Whose* is the relative pronoun for NPs whose features are < + human > and < + possessive > and therefore concrete only when the antecedent is present, e.g. she knew whose dog it was. When no antecedent is present *whose* is always interpreted as

< + human > < + possessive >, < + IDENTITY OF > and therefore < - concrete >, e.g. she knew whose dog it was. The same argument holds for (2.105 c).

Sentence (2.107 c) contains the underlying sentences in (64).

- (2.107) a. Which one did he like best?
 b. Alice didn't know which one he liked best.
 c. *Alice didn't wash which one he liked best.

- (64) a. Alice didn't know [THE IDENTITY OF a certain ONE].
 b. He liked [a certain ONE] best.

If the same identity relations exist in (64) as exist in (60), then relativization can occur. That is, if (64 b) modifies (64 a) and if [a certain ONE] in both parts of (64) are coreferential designations, then a relative structure like (2.107 b) can derive from (64). Since (64 a) can be reformulated as "Alice didn't know the identity of X" it is again the result of the fact that identities cannot be washed that (2.107 c) is ungrammatical.

The final set of examples in Baker's first argument is (2.108).

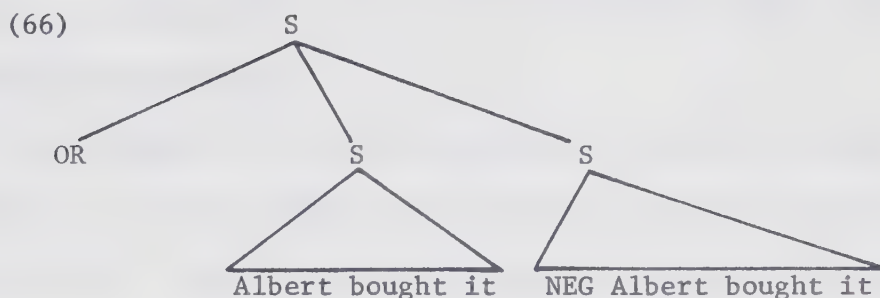
- (2.108) a. Did Albert buy it?
 b. Alice didn't know whether Albert bought it.
 c. *Alice didn't wash whether Albert bought it.

Sentence (2.107 b) contains an embedded disjunctive set of clauses (or sentences) which can be represented as (65).

- (65) Either Albert bought it or he he didn't buy it.

Ross (1967) claims that the underlying structure of sentences like (65)

is (66).



Langacker (1970) argues convincingly that the sentences in (67) are derived transformationally, in progressive steps, from (66).

- (67) a. Either John bought it or he didn't.
 b. Either John bought it or not.

The disjunction in (64) and (66) is a statement of two possible alternative situations. The alternatives are (68 a) and (68 b).

- (68) a. John bought it.
 b. John didn't buy it.

The second alternative, (68 b), is less completely represented in the surface structure of (67) than it is in (64). The underlying presence of (68 b) is nevertheless just as certain and equally as clear in both (67) and (65). The disjunction signal *either* must then carry some kind of referential or coding device to indicate that at least two alternatives exist and that the second of the two alternatives is in some way opposed to the first. It is possible to have more than two disjunctions but, as shown in (70), it is the rightmost alternative which can be most radically reduced.

- (69) Either Jill is pregnant or she isn't or I'm confused.

- (70) Either John went fishing or hunting or neither.

When it is reduced, the rightmost alternative takes on the form *not either*, which becomes *neither*. In (70) the *(n)either* refers back to the preceding alternatives.

It is possible to set up a semantic or abstract category EITHER which is a proform representing alternatives such as those specified in (68). Ross' abstract disjunction morpheme *OR*, which is distributed to each of the members of the disjunctive relationship, is akin to this. For convenience, then EITHER and *OR* can be merged and referred to as OR. This merger is further motivated in the discussion below. The fact that *neither* in (70) contains *either*, which is a referential category for the preceding sentences, strongly supports the proposal that OR is a proform. The examples in (71) show that OR can refer to nouns, verbs and other linguistic categories.

- (71) a. Joe ate either an orange or an apple or neither.
 b. Joe either walked, or ran or neither.
 c. Joe went in or out or neither.

Either can appear in surface structures as a grammatical object:

- (72) Did you like "Nicolas and Alexandra" or "Elizabeth R" better? I didn't see either.

Since *either* can stand for a disjunction and can be a grammatical object, we claim that the proform OR appears as the object of *know* in the underlying structure of (2.108 b). The relevant portion of (2.108 b) is (73 a).

(73) a. Alice didn't know OR.

b. OR Albert bought it. NEG Albert bought it.

On entirely independent grounds the underlying structure of the remaining portion of (2.108 b) is something like (65) (or (66)), given here as (73 b), in which there is also an identical occurrence of the proform. If these two proforms have identical referents then they can be relativized in the usual way. Relativized OR is *whether*.

There is one problem in this analysis: the first member of the identical set of NPs is only marginally acceptable in surface structure like (74):

(74) a. ?Alice didn't know either whether John bought it
or not.

An admittedly ad hoc constraint is required to delete the leftmost occurrence of EITHER if relativization has applied. At the same time, *either* in surface structure is better if two *whether*'s follow:

(74) b. ?I don't know either whether he swam, or *whether*
he brought his boat.

In this case two other disjunctives appear as alternates for *either*.²⁰ Sentence (74 b), for example, would have the underlying structure (75).

²⁰Both (74 a) and (74 b) are completely acceptable as

(A) John doesn't know and Alice doesn't know either...

(B) You don't know and I don't know either...

where *either* is negative *too* and bears contrastive stress.

intended message is that Alice didn't wash either the green shirt or the brown jacket specified in (77 a), then (77 b) is grammatical. The referents of *either* are concrete. The abstract nature of conceptual alternatives in (2.108) is the conditioning factor preventing (2.108 c).

Baker's first argument in support of embedded interrogatives is therefore not completely unassailable and is open to alternative interpretations using rules which are all required independently in a grammar of English. One possible exception to independent motivation is the antecedent deletion transformation which is motivated by the overlapping of (78).

- (78) a. This is the garden that I planted last month.
- b. This is what I planted last month.
- c. This is the thing that I planted last month.

These three sentences have partially overlapping meanings. One reading of (78 b) could be (78 a) while another reading of (78 b) could be (78 c). They are however, distinct because while (78 b) can be derived from (79), (78 a) must be derived from (80).

- (79) This is [THE THING].
- I planted [THE THING] last month.

- (80) This is the garden.
- I planted the garden last month.

While *the garden* can be a member of the set THE THING (78 a) presents detail which would be unrecoverable from (78 b) if (78 b) derived from (78 a). On the other hand, there is no such loss from (78 c) to (78 b) (although by its very indeterminate nature *thing* in (78 c) is

open to a virtually infinite number of readings). ANT-DEL is therefore well motivated.

Therefore, all of the examples Baker uses as his first argument can be analysed as relatives rather than as embedded interrogatives.

Baker's second argument was that the cleft versions of sentences embedded after *know* were possible but that the corresponding sentence with *wash* was not. It is possible to analyse (2.109 b) into relative clauses.

- (2.109) a. What was it that Albert bought?
 b. Alice didn't know what it was that Albert bought.
 c. *Alice didn't wash what it was that Albert bought.

The basic sentences are those in (81).

- (81) a. Alice didn't know [THE IDENTITY OF THE THING].
 b. It was [THE THING].
 c. Albert bought [THE THING].

If (81 b) and (81 c) contain coreferential object NPs it is possible to derive sentence (82) from them. This leaves (83) as the residue of (81).

- (82) It was the thing that Albert bought.
 (83) a. Alice didn't know [THE IDENTITY OF THE THING].
 b. It was [THE THING] that Albert bought.

The sentences in (75) can in turn be relativized to (84).

- (84) Alice didn't know [THE IDENTITY OF THE THING] that
it was that Albert bought.

A slight complication of the analysis is required here to properly derive (2.109 b) from (84). The sentences in (85) all contain relative clauses in which a nonhuman object has been relativized.

- (85) a. John saw the thing that Albert bought.
b. Alice ate something that Albert bought.
c. Mary washed the thing that Albert bought.

ANT-DEL cannot apply to these sentences in the straightforward fashion implied when it was introduced above. If it were to so apply, then ungrammatical sentences like those in (86) would result.

- (86) a. *John saw that Albert bought.
b. *Alice ate that Albert bought.
c. *Mary washed that Albert bought.

When the antecedents of (85) are deleted, only (87) can result.

- (87) a. John saw what Albert bought.
b. Alice ate what Albert bought.
c. Mary washed what Albert bought.

ANT-DEL must therefore be modified to convert all nonhuman relatives to *what*. This modification can be carried out through a three step process, as shown in the derivation (88).

- (88) a. John saw the thing. Albert bought the thing.
b. John saw *the thing which* Albert bought.
c. John saw *that which* Albert bought.
d. John saw *what* Albert bought.

It is this modified antecedent deletion transformation which operates upon (84) to yield (2.109 b).

The ungrammatical (2.109 c) is the result of an embedded cleft rather than an embedded interrogative. A cleft sentence functions to identify some qualities of an indefinite proform. For example, in (89) the indeterminate *it* is specified later in the sentence. This sentence derives from a sequence like (90).

(89) It was an elk that Albert saw.

(90) a. It was an elk.

b. Albert saw an elk.

The *it* of (90) presumably exists as a proform referring to some contextually determined concept. The utterance of (89) is intended to supply appropriate clues as to the identity of the object of Albert's perceptions.

Similarly the pseudo-cleft sentences in (91) and (92) also supply identifying information about Albert's perceptions.

(91) What Albert saw was a Canada Jay.

(92) What it was that Albert saw was a Clark's Nutcracker.

These two sentences have the underlying structures (93) and (94) respectively.

(93) a. Albert saw [SOME THING].

b. [SOME THING] was a Canada Jay.

(94) a. It was [SOME THING].

b. Albert saw [SOME THING].

c. [SOME THING] was a Clark's Nutcracker.

The pseudo-clefts differ from clefts in having a proform as the subject of an embedded clause which is relativized. The two types do not however differ in their general functional purpose: the elaboration of information about some previously unidentified object.

As a contrast to (91) and (92), there are sentences like (95) and (96) which specifically disregard the identity of the object.

(95) a. Whatever Albert saw doesn't matter, it's gone.

b. Whatever party won is irrelevant.²¹

(96) a. Whatever it was that Albert saw is gone.

b. Whatever it was that Albert bought he lost it.

In this connection note that *-ever* inserted to (2.109 c) makes it grammatical:

(97) Alice didn't wash whatever it was that Albert bought.

The source of *-ever* in these sentences is unclear. Whatever the source, *-ever* specifically removes the abstract character by deliberately ignoring the identity of the referent of *what*. The resulting structure may not be a cleft at all.

Since *-ever* modifies the abstract character of pseudo-cleft *what*, and since *-ever* inserted into (2.109 c) makes it grammatical, it can be concluded that (2.109 c) is ungrammatical because of the abstract character of one of its elements, namely *what*. If clefts

²¹There are also sentences like (C) which are interpreted in a similar way.

(C) Whatever Albert saw was a Canada Jay.

This sentence can mean that Albert ignored the particular identity of the object which he saw and called it a Canada Jay no matter whether it was actually one or not.

are expansions of abstract proforms, and if an embedded cleft is the object of a verb, then the immediate underlying object of the verb can only be the abstract proform. Since *wash* cannot take abstract proform objects, (2.109 c) is ungrammatical. A putative derivation of (2.109 c) would be (98).

- (98) a. Alice didn't wash [IT].
 b. [IT] was [SOME THING].²²
 c. Albert bought [SOME THING].

- (2.109) c. Alice didn't wash what it was that Albert
 bought.

Baker's third argument was that *else* can appear in interrogatives and after *know* but not after *wash*:

- (2.110) a. What else did Albert buy?
 b. Alice didn't know what else Albert bought.
 c. *Alice didn't wash what else Albert bought.

Sentence (99) is a paraphrase of (2.110 b).

- (99) Alice didn't know what other thing Albert bought.²³

In the following sentences *else* is interchangeable with *other*.²⁴

²²The notation here is more exact than it is in (81 b). The difference reflects the intervening observations concerning the function of clefts and not a fundamental change of position. The abbreviation of [IT] is still intended to reflect 'the identity' of some unspecified object.

²³The singularity of *thing* here is not important. The contextual information would specify number in some way so that both *else* and *thing* have equi-number referents.

²⁴In the change from the (a) to the (b) versions here, the modified noun (*thing*, *person*, *animal*, etc.) is attached to the determiner and is lost as an overt unit in the interrogative.

- (100) a. Give me some other thing.
b. Give me something else.
- (101) a. What other person came?
b. Who else came?
- (102) a. What other thing did Arthur buy?
b. What else did Arthur buy?
- (103) a. I saw some other person.
b. I saw someone else.
- (104) a. Jane and another person came.
b. Jane and someone else came.
- (105) a. Give me what other thing you have in your hand.
b. Give me what else you have in your hand.

In all of the sentences the modified noun is a proform.

It is not possible to substitute *else* for *other* if the modified NP is specified as a particular instantiation of the proform.

- (106) a. Jane and some other girl came.
b. *Jane and some-girl else came.
- (107) a. I saw some other man.
b. *I saw some-man else.
- (108) a. What other shirt did Arthur buy?
b. *What-shirt else did Arthur buy?

Against this background the sentences in (2.110) became transparent. The underlying sentences for (2.109 b) are (109).

- (109) a. Alice didn't know [THE IDENTITY OF SOME other
THING].
b. Albert bought [SOME other THING].

The *other* in (109) can either be retained into the relative structure (110), or it can be exchanged for *else* to yield (2.110 b).

(110) Alice didn't know what other thing Albert bought.

Since *what* in (2.110 c) would derive from an abstract NP of identity [SOME other THING], (2.110 c) is ungrammatical.

Baker's fourth argument derived from the sentences in (2.111).

(2.111) a. What was given to whom?

b. Alice didn't know what was given to whom.

c. *Alice didn't wash what was given to whom.

These sentences differ from the preceding ones only by the presence of unspecified *whom*. The ungrammaticality of (2.111 c) cannot therefore be attributed to the status of *what* as an interrogative word.

What Alice doesn't know in (2.111 b) is the system of indices that relates *what* and *whom*. She may well know the identities of all of the objects as well as the identities of all persons who received these objects. She does not know how the two sets are paired. It is the pairings (index system) which are the object of *know* in (2.111 b):

(111) a. Alice didn't know [THE PAIRINGS].

b. Somebody gave [SOME THINGS] to [SOME PERSONS].

If "Harry" occurs as the direct object of (2.111 c), the sentence is grammatical because the object of *wash* is then only that specific object which is paired with "Harry".

Since all of the examples of (2.113) in Baker's fifth argument are ungrammatical it is difficult to evaluate the point (except that it is weak).

- (2.113) a. ?What that was new and different did Albert buy for Alice.
- b. ?Alice didn't know what that was new and different Albert bought for her.
- c. *Alice didn't wash what that was new and different Albert bought for her.

If the relative clause in the sentences of (2.113) is permuted to the end of the sentence, a grammatical sentence results in each case:

- (112) a. What did Albert buy for Alice that was new and different?
- b. Alice didn't know what Albert bought for her that was new and different.
- c. Alice didn't wash what Albert bought for her that was new and different.

The ungrammaticality of (2.113) probably therefore derives exclusively from the repositioning of the relative clauses.

The relative clause analysis of (2.113 b) proposes the following sentence units:

- (113) a. Alice didn't know [SOMETHING].
- b. Albert bought [SOMETHING] for her.
- c. [SOMETHING] was new and different.

If [SOMETHING] in (113 a) is an unknown (unspecified) object about

which (113 b) and (113 c) are true statements, then (2.113 b) can be derived via the following steps:

- (114) a. Alice didn't know [SOMETHING].
 b. Albert bought [SOMETHING] for her that was new
 and different.
 c. Alice didn't know what Albert bought for her
 that was new and different.

The repositioning of the relative clauses to derive (2.113 b) then juxtaposes two relative pronouns, thereby making the sentence ungrammatical. The same conditions apply to (2.113 c).²⁵

The final argument offered by Baker is that (2.114 b) is grammatical while (2.114 c) is not.

- (2.114) b. Alice didn't know the answer to the question:
 What did Albert buy?
 c. *Alice didn't wash the answer to the question:
 What did Albert buy?

The presence of *answer* is presumably a manifestation of an underlying interrogative marker and (2.114 b) is a paraphrase of (115).

- (115) Alice didn't know what Albert bought.

Since answers cannot, under normal circumstances, be washed, it is

²⁵The interrogative in (2.113 a) may be ungrammatical because of the relative clause immediately following the multiply ambiguous WH word. This aspect of the problem is unclear. If the (b) and (c) versions have a common source for their ungrammaticality which is distinct from that of (a), we could adopt Baker's strategy and use this parallel as a counterargument to Baker's own analysis.

not surprising that (2.114 c) is ungrammatical.²⁶

Therefore it is possible to show that all of the examples which Baker uses to derive his contention that so-called embedded interrogatives derive from underlying questions are interpretable as relative structures. Furthermore the ungrammatical sequences which form part of his argument are ungrammatical because of co-occurrence restrictions on verbs and objects. Since the relative clause analysis permits statement of these restrictions, it is preferred over the embedded interrogative analysis. The following section discusses the index system of interrogatives and presents an alternative solution which completes the re-analysis of sentences like "What did you say that Albert bought?"

As was shown in Chapter II, section 2.10, Langacker refuted Baker's general claims for a segmental *Q*. The second part of Baker's proposal was that a system of indices was required to link specific elements in an underlying syntactic sequence to the *Q* morpheme. Langacker (1969) supported this system of indices (but linked them to an abstract performative interrogative morpheme *ASK*.)

²⁶Grammars should not be expected to evaluate as grammatical a sentence which reflects possibilities outside the realm of the cultural experiences of the speakers.

It is, however, possible to imagine a set of circumstances in which (2.114 c) would be grammatical. Assume that a number of answers to questions had been written out on pieces of paper. Through appropriate extraneous circumstances some of these pieces of paper were thrown into a washing machine with the laundry and some were not. Then, someone might say (2.114 c) is an acceptable sentence.

The prime sentence in support of an index system was
(2.123).²⁷

(2.123) Who remembers where we bought which book?

The allegedly ambiguous nature of the question is revealed in the two possible answers:

(2.124) John and Martha remember where we bought
which book.

(2.125) John remembers where we bought the physics
book and Martha and Ted remember where we bought
the *Wizard of Oz*.

The index system assumed that *where* in (2.123) was an interrogative word. Under the relative analysis offered in section 3.5, *where* is a locative relative pronoun derived from the following sentences.

(116) a. Who remembers [THE IDENTITY OF THE LOC].

b. We bought the book [at THE LOC].

These two sentences will yield "Who remembers where we bought *the book*?", but not "*which book*." The two interpretations (2.124) and (2.125) of the scope of *where* can be seen as a function of whatever elements of number are associated with [THE LOC]. If [THE LOC] has presuppositional plurality, then there is no reason to suspect that there should be a unique relation between it and *book*. If there

²⁷This sentence was given by Baker. See section 2.9 of Chapter II. Langacker uses the same question.

is a presupposition which states 'we bought books at several locations', then *where* can refer individually to each of them. The statement 'THE LOC is plural' is attached to such a presupposition. If [THE LOC] is plural, then *book* must also be plural because one does not usually buy the same book (token) at more than one place.

The phrase *which book* is necessarily ambiguous. The ambiguity is made clear if contrastive stress is added to *which* in (2.123), thereby emphasizing the singularity of *book*. If, on the other hand, there is no contrastive stress present, then either (2.124) or (2.125) are acceptable answers. Therefore given (2.125), *which book* in (2.123) can have a plural referent.

It is therefore important to understand the source of this ambiguity. A question like (2.123) is a request for information about the identity of some person (or persons) such that the person is capable of pairing locations at which books were purchased with books which were purchased. It does not request that locations be specified. Nor does it request that the books be identified. A possible appropriate answer to (2.123) is "I do." Therefore the only questioning element in (2.123) is *who*. All other indeterminacy derives from the multiply ambiguous nature of words like *where* and *which*. Even the most definite expression like (117) has, potentially, an infinite number of referents:

(117) I know which red covered paperback introductory
linguistics book you are referring to.

Then, if *which book* is infinitely ambiguous and if *where*,

the relative derived from a proform like LOC, and hence ambiguous, is also open to a variety of interpretations, then various pairings of these two ambiguous elements should be possible. The ambiguity of (2.123) results, then, not from a series of distinct ranges in scope of an interrogative morpheme, but from internal potential plurality of the unspecified elements involved. The pairing mechanism is outside the realm of grammars as sketched earlier in this chapter: it has to do with intrinsic knowledge of the speaker about the linguistic and **extragrammatical** contextual information.

The source of *which book* is unclear. It is not an interrogative as was shown above and there is no obvious way in which it can be derived as a relative clause. The series of statements in (118) provide an appropriate resumé of the value of (2.123).

- (118) a. Q WH + SOME ONE
 b. Q WH + SOME ONE remembers [THE IDENTITY OF
 SOME BOOK].
 c. We bought BOOK at LOC.

If the alleged ambiguity of (2.123) revealed in the distinction between (2.124) and (2.125) were to be upheld, then it can only derive from the interpretation of *who*. The fact that John and Martha in (2.124) both remember where all the books were bought is a function of their individual memories and not a result of the syntactic structure of the question. Similarly the fact that John remembers one set of facts and that Ted and Martha remember another (in (2.125))

is not related to the syntax of the question in any way. The series in (118) allows for precisely these interpretations.

It might be possible, then that (118) as an approximate underlying structure could allow relativization of SOME BOOK to *which book* in the same way that LOC relativizes to *where*:

(119) Q WH + SOME ONE remembers which book we bought at
LOC.

The string (119) would then be an intermediate stage derived from the coalescence of (118 b) and (118 c). Solution to the dilemma of *which book* is not however crucial to a rejection of an index system of the type posited by Baker and Langacker in the underlying structure of (2.123).

Furthermore, a question like (120) illustrates that no indexing exists in the underlying structure.

(120) Where did we buy which book?

The question is a request for an indexing system to be assigned to two (or more) lists of locations and books. The indexing then would allow for pairing. Answers like those in (121) are what are anticipated by the speaker of (120).

(121) a. We bought the blue book in London.

b. We bought the red book in Peking.

c. We bought the black book in Stockholm.

The scope of the interrogative word in (2.123) can be defined independently of its relationship to the interrogative morpheme. The ambiguities of features like number are independently

accounted for. The distribution of the semantic content of a sentence initial interrogative morpheme to NPs lower in the P-marker does not therefore depend upon a system of differential indices. As Katz and Postal (1964) demonstrated, and as all subsequent investigations except Kuroda (1969) have accepted, NPs in underlying structures have to be marked in order for interrogative distribution to occur at all. An underlying *Q*, an abbreviation for the semantic indefiniteness characteristic of questions, and an underlying *WH* morpheme, an abbreviatory device required to attract *Q* to some NP, accomplish these functions satisfactorily.

Langacker's (1969) abstract performative verb *ASK* with the indexed feature *OP* is a functional equivalent of a *Q + WH* notation. Langacker offers no independent support for the prior value of performative verbs like *ASK* over *Q*. Performatives introduce extra-syntactic information relevant to the production of sentences by speakers. There is evidence that performatives as currently conceived are inadequate devices for uniting the subcomponents of a grammar of usage. Indices are not required to differentiate among the NPs which are questioned in a single tree. Each of the NPs independently has sufficient feature attributes to distinguish it from each of the other NPs in the tree so that an additional index is redundant. The function of the index then can only be to distribute the semantic information putatively resident in *ASK* and abbreviated as *OP*, an interrogative operator. The same function was performed by the Katz-Postal *Q + WH*.

One of Langacker's concerns with the Katz-Postal analysis

was that sentences like (122) would have a semantic interpretation like (123).

(122) I wonder whether I will finish in time.

(123) I wonder I request that you answer will I finish in time.

An analysis which derives *whether* as relativized OR avoids the problem. However, even if *whether* in (122) were an interrogative word it is still the case that the performative reading of *Q* is merely an attempt to specify the type of semantic content that *Q* might have. Its imposition into surface structures like (123) is misguided. At the same time it can easily be demonstrated that an indexed operator feature attached to *ASK* produces similarly distorted semantic readings when imposed on surface structures.

Since *ASK* occurs in a structure like *ASK I you* it is reasonable, though admittedly teleological at this point, to loosely characterize a particular index as a manifestation (representational facsimile) of *ASK I you*. *ASK I you* becomes *I ask you* in surface structures. Langacker's system would presumably present an analysis of (122) with the index (k) attached to the node which dominates *whether*. The anomalous sequence (124) is then a paraphrase of (122) and is obviously as bizarre as (123).

(124) I wonder I ask you will I finish this in time.

If the *ASK* and the *Q + WH* proposals are functionally equivalent the selection of one over the other is evident. The *Q + WH* notation does not obfuscate the issue with complex and unnecessary

notational gimmicks. It merely provides semantic qualities and locates their occurrence in nodes in trees. This mechanistic simplicity makes it the clear choice over *ASK*.

3.8 Conclusion

This chapter has continued the examination of the status of the interrogative morpheme begun in Chapter II. Because of the general impossibility of accurately (or even approximately) formulating a performative statement which introduced presuppositional information into the underlying structure of sentences, performatives will be discarded in general. Necessary presuppositional information will be assumed to be present in those instances in which it is required for syntactic purposes.

Because of the exclusion of performatives, interrogatives are marked in underlying structure by a morpheme *Q*. This morpheme has the semantic effect "this sentence is a question". Relevant syntactic operations take place in the environment of *Q*. Sentences may also contain a special morpheme *WH* attached to one or more nodes. When *WH* is present it has the value "this node is indeterminate and is the focus of the question intent." The morpheme *Q* cannot have segmental status since it never has surface realizations. It is never attached directly to any category node other than *S*. Since the scope of *Q* is the entire sentence and since *WH* provides the focus for particular elements, there is no need to posit a separate indexing system to define the scope of *Q*. An indexing

system would be a functional equivalent of this dual morphemic structure.

This chapter also examined so-called embedded interrogatives and concluded that they are better thought of as relative clauses. As relative clauses, they can no longer be used to argue either for or against performative *Q* or segmental *Q*. The alternative analysis of embedded interrogatives provides a satisfactory explanation for the ambiguous sentence:²⁸

(125) What did you say that Albert bought?

Three readings of (125) can be seen in the contexts of (126), (127) and (128):

(126) The person designated as "you" in (125) said
"Albert bought an X." The hearer, unsure of the
identity of X, then says (125).

(127) "You" in (125) said something which was noteworthy
for some reason. This statement was then printed
up on leaflet sheets which could be purchased.
"You" had made several "published" statements which
were each available as individual sayings. Albert
bought one (or more) of these sheets and the speaker
of (125) wants to know which one(s) it was.

(128) "You" in (125) said something and Albert was gullible
enough to believe it.

²⁸This sentence was originally pointed out to me by G. D. Prideaux as an apparent counter-example to this analysis.

The underlying structures of (125) for each of (126)–(128) vary in just the right ways to account for the differences. In (126) the *what* derives from the underlying object of *bought*. Therefore (129) is the underlying sequence.

(129) *Q* you said [*WH* + SOMETHING].

Albert bought [*WH* + SOMETHING].

The declarative equivalent (i.e. absence of *Q* and *WH*) of (129) would be:

(130) You said [SOMETHING].

Albert bought [SOMETHING].

If SOMETHING in both strings in (130) is coreferential, then relativization and ANT-DEL occur to produce (131).²⁹

(131) You said what Albert bought.

When *Q* and *WH* are present, the same basic derivation takes place except that the *WH* word *what*, which derives from the underlying object, is moved to sentence initial position.

(132) a. *Q* you said [*WH* + SOMETHING] Albert bought
[SOMETHING].

b. Relativization →

Q you said [*WH* + SOMETHING] that Albert bought.

c. *WH* word formation →

Q you said what that Albert bought.

d. *WH* movement →

²⁹*Say* is a verb which allows abstract objects, cf. "John said the creed."

Q what you said that Albert bought.

e. SAI, *Q* deletion, morphophonology →

What did you say that Albert bought.

The underlying structure of (125) on the reading (127) will be (133).

(133) Underlying structures:

Q you said [*WH* + SOME THING] Albert bought [SOME THING].

The difference between [*WH* + SOMETHING] in (132) and [*WH* + SOME THING] in (133) is that in the latter it is the determiner which is being questioned, whereas in the former it is the identity of the whole noun phrase. Hence the distinction between a proform for the NP and a composite proform for the determiner + NP sequence is required:

(134) a. Underlying structure:

Q you said [*WH* + SOME THING] [Albert bought SOME THING].

b. Relativization →

Q you said [*WH* + SOME THING] that Albert bought.

c. *WH* word formation →

Q you said what (thing) that Albert bought.

d. *WH* movement →

Q what you said that Albert bought.

e. SAI, *Q* deletion, morphophonology →

What did you say that Albert bought?

The derivation of (125) for the reading (128) will be the

same as (134) except that the verb *buy* will have a different (idiomatic) meaning.

Since the system of $Q + WH$, and embedded relatives provides appropriate derivations and also disambiguates ambiguous sentences in just the desirable ways, we can conclude that it is a satisfactory descriptive tool.

CHAPTER IV

FRENCH INTERROGATIVES: INTONATION AND YNQ

	<u>Page</u>
4.0 Introduction	149
4.1 Intonation questions	150
4.2 Intonation questions and conjunction -- Langacker's proposal	150
4.3 Intonation questions and conjunc- tion -- Hirschbühler's proposal	160
4.4 Conjunction refuted	169
4.5 Conclusion	175

CHAPTER IV

FRENCH INTERROGATIVES: INTONATION AND YNQ

4.0 Introduction

This chapter begins the analysis of question formation in French. There are three types of YNQ which have overt structural markings in French¹: intonation, inversion and *est-ce que* questions, illustrated by the sentence pairs (1)-(3).

- (1) a. Il vient.

He is coming.

- b. Il vient?

Is he coming?

- (2) a. Il est venu.

He came.

- b. Est-il venu?

Did he come?

- (3) a. Elles sont venues.

They (fem.) came.

- b. Est-ce qu'elles sont venues?

Did they come?

This chapter treats intonation questions (IQ) and outlines recent proposals for treating IQ as special derivatives of underlying conjunctive sequences. These proposals have inherent weaknesses

¹There is a fourth type discussed by Zwanenburg (1965:61) which depends upon the discourse environment to be interpreted as interrogatives. This work is restricted to an analysis of those questions with some sentence internal mark indicating that they are interrogatives.

relating to the nature of deletion (structure destroying) transformations, the preservation of meaning and the nature of identical constituents. Intonation is held to be a phenomenon interacting with underlying semantic and paralinguistic factors as well as with phonological features.

4.1 Intonation questions

In the IQ (1 b), the word order does not differ from that of the corresponding declarative. Use of rising intonation is a regular interrogative process in French and applies to any grammatical sentence, as illustrated in (4) - (5).

- (4) a. Votre mère est malade.

Your mother is sick.

- b. Votre mère est malade?

Is your mother sick?

- (5) a. Les trois chevaliers ont tué douze païens.

The three knights killed twelve pagans.

- b. Les trois chevaliers ont tué douze païens?²

Did the three knights kill twelve pagans?

4.2 Intonation questions and conjunction -- Langacker's proposal

Katz and Postal (1964) derived rising intonation of YNQ in English by post-posing the segmental *Q* when no *WH* was present

²The notation  is only an approximation. An approximate notation  is used for falling intonation. Refinements and details are discussed in sections 4.4 and 4.5.

(p.105, T4)³. Morphophonemic rules operated upon this *Q* to produce the appropriate intonation contour (p.111). *Q* was deleted by a special rule if it was not moved to sentence final position.

This analysis runs into difficulties on two levels. First, the two syntactic rules, *Q* postposing and *Q* deletion are both ad hoc in that they are invoked solely for the purpose of dealing with a particular set of sentences. The transformations involved are not required to derive any other types of sentences (i.e. are not independently motivated). However, *Q* deletion will be required in one form or another because the question morpheme never appears in surface structures. Second, subjecting an abstract morpheme like *Q* to transformational permutation is inconsistent with its general status as a sentence-type marker and trigger for transformational processes like *WH*-shift and SAI. In this role it provides the abstract semantic environment "interrogative" and should not be subject to the operations of syntactic processes. The underlying position of an abstract marker in a left-right string is a matter of notational convenience within the descriptive system and is not subject to overt observation. There can be no general motivation for permuting any marker which is entirely abstract since such a marker by definition does not appear in surface structure. There can therefore be no systematic alternations of position to motivate a permutation transformation. Analyses which depend upon such transformations are therefore ill begotten. Since the Katz-Postal analysis fits this category a modified means of deriving

³The *WH* of sentence adverbial had been deleted by T3. For brief discussion see above section 2.5.

the intonation in sentences like b. in (4) and (5) is required.

Langacker (1970)⁴ argues that rising intonation of YNQ derives from their source as conjoined structures. Katz and Postal derive sentences like (7) and (8) from structures containing only one clause, namely (6).

(6) # + either/or Herschel is home #.

(7) Either Herschel is home, or not.

(8) Either Herschel is home, or he isn't home.

Langacker points out that under this analysis (7) and (8) require transformational insertion of both the second clause (conjunct) and NEG. Such transformational insertions were precisely what Katz and Postal were arguing against. That is, the notion of recoverability precludes meaning alterations by transformations and NEG changes the meaning of a sentence to which it is attached⁵. Langacker also points out Ross' findings (1967) that *OR* (the abbreviation of the suppletive form *either~or*)⁶ behaves like the conjunction *AND* and should therefore be considered as a conjunction. If *OR* is a conjunction, then sentences like (9), which contain non-identical conjuncts, are

⁴Langacker (1970) is a slightly modified version of Chapter III of Langacker (1969b). Langacker rejects Stockwell's (1960) proposal that question intonation be associated with the SAI rule since sentences like (A) undergo SAI but are not questions, and because sentences like (B) are questions but do not undergo SAI.

(A) Never again will whooping cranes grace our prairies.

(B) You cultivated a nettle?

⁵Tag questions like "isn't he?", "don't they?" and "aren't we?" are exceptions to this principle in that they solicit agreement, confirmation or acknowledgement. The French tag question device "n'est-ce pas?" has the same general function. Tag questions are not dealt with in this thesis and the role of the negative element is left unexamined.

⁶See Ross (1967:89) and above Chapter II, 2.5.

structurally related to sentences like (7) and (8).

(9) Either birds eat worms, or eagles chase snakes.

Using conjunction *OR* Langacker posits the underlying structure of (7) and (8) as (10) (p.147), replacing Katz and Postal's (6).

(10) (OR (Herschel is home) (NEG (Herschel is home)))

All of the transformations required to derive (7) from (10) are well motivated. The first transformation is conjunction distribution which attaches *OR* to each of the S nodes, to yield (11).

(11) (OR (Herschel is home) (OR (NEG (Herschel is home))))

$$\begin{array}{ccccccc} & & S_1 & S_2 & & S_2 S_3 & & S_3 S_1 \end{array}$$

Although conjunction distribution apparently builds structure by attaching a node to the S on the right, the configuration with an *OR* as the left-most member implies a dominance of the entire sequence by *OR* and there is no meaning change. Conjunction distribution is motivated by surface structure representatives of *OR*. On the other hand, *Q* postposing (à la Katz Postal) has no consistent reflection in surface intonation, as is demonstrated below and is therefore less well motivated.

Negative placement and various morphophonological processes could apply to (11) to yield the surface structure (12).

(12) Either Herschel is home, or Herschel isn't home.

However, sentences like (12) are usually avoided by pronominalizing the second occurrence of an identical NP, so that (8) would derive from (11). Sentence (7) is synonymous with (8). The difference in surface structure between (8) and (7) is that in the latter the second conjunct is deleted. Therefore a conjunct deletion transformation is required. Conjunct deletion applies before NEG placement

because if NEG is attached to the auxiliary, the conjuncts are not identical and some ad hoc means of extracting NEG from the second conjunct would be necessary.

In summary form the derivations by these transformations are shown in (13).

(13) a. Underlying representations:

OR (Herschel is home) (NEG (Herschel is home))

b. Conjunction distribution →

OR (Herschel is home) (OR (NEG (Herschel is home)))

c. Conjunct deletion (optional) →

OR (Herschel is home) (OR (NEG))

d. NEG Placement →

OR (Herschel is home) (OR (Herschel is not home))

e. Pronominalization →

OR (Herschel is home (OR (He is not home)))

f. Morphophonology →

Either Herschel is home, or $\left\{ \begin{array}{l} \text{he isn't} \\ \text{(he's) not} \end{array} \right\}$ (home)

The alternatives in (13 f) depend upon whether or not conjunct deletion applies. If conjunct deletion applies, then NEG placement (13 d) cannot apply. This implies the possible derivation either through stages (13 a-b-c-f) or through stages (13 a-b-d-e-f). *Home* is optional in (f) under general conditions of optional deletion of equivalent nodes.⁷

⁷Equivalent node deletion accounts for the alternating pairs (C) and (D):

(C a) John is swimming and Joan is swimming too.

b) John is swimming and Joan is too.

(D a) The dog is eating and the cat is eating too.

b) The dog is eating and the cat is too.

(D b) can also reduce to "The dog is eating and so is the cat." For some discussion of a similar construction see Bouton (1969).

In conjunctive sentences like (7) and (8), the first conjunct may bear rising intonation and the second may have falling. Langacker proposes that this fact can be exploited in assigning rising intonation to YNQ by deriving YNQ from the first conjunct in a conjunctive structure like (10). That is, he sees a parallel between rising intonation on nonfinal clauses and rising intonation on YNQ and tries to capture the 'generality' by deriving the two types of sentences from similar underlying sources, namely conjunctives. This requires inclusion of *Q* in the underlying structure in sentence initial position, and the attachment of *WH* to *OR*. The latter attachment produces the structure *WH + OR* and the whole complex is distributed by the conjunction distribution transformation to each of the conjunctive nodes. The underlying structure (14) will then underlie the sentences (15)-(17).

(14) *Q WH + OR* (Herschel is home) (NEG (Herschel is home))

(15) Is Herschel home or isn't he (home)?

(16) Is Herschel home, or not?

(17) Is Herschel home?

In addition to the rules required for the derivations in (13), both a *WH + OR* deletion rule and an *or not* deletion rule are required. Both rules are ad hoc and the analysis of YNQ as first members in disjunctive sets relies upon the credibility of these rules. The *WH + OR* deletion rule is required to prevent *whether* from appearing initially in both conjuncts in surface structure. The *or not* deletion rule is required to derive (17) from an intermediate stage like (16). If the intonation of a YNQ like (17) is to be assigned in the same way as in (13)-(16), then intonation assignment must occur before

or not deletion. Otherwise the *or not* deletion rule could apply and delete the environment of first conjunct rising intonation. This ordering requirement can only be interpreted as demonstrating that some phonological rules must apply prior to some syntactic operations.⁸

French offers the following sequence of sentences illustrating conjoined structures in various stages of reduction.⁹

(18)



(19) Ou (elle vient) (NEG (elle vient))

(20) Ou elle vient ou elle ne vient pas.

(21) Ou elle vient ou non.

⁸Langacker observes in footnote 6 (p.160) that in the light of this requirement:

It is tempting to speculate that this may in some way be connected with the observation that children learn intonation patterns before they master other phonological and syntactic phenomena.

Such speculation may be premature at this time.

⁹In his 1965 analysis, Langacker proposed that interrogative intonation in French be derived in much the same way as in the Katz-Postal analysis of English. In addition to the criticisms against such an analysis in principle, sentence (E) does not always have rising intonation.

(E) Elle aime qui?

Who does she love?

Since Langacker's formative *WH*, similar to the Katz-Postal *Q*, and the signal for an intonation high, appears in sentence final position (in *qui*), it is clear that his analysis is untenable. The application of the conjunction proposal to French data by-passes the above difficulty.

French rules equivalent to conjunction distribution, NEG placement and conjunct deletion are required to derive (20) and (21) from (19), which is the equivalent of (10) with French morphemes. The structure (18) is the abbreviated corresponding P-marker.

The bars in these sentences indicate the general direction of the intonation contour. It is readily seen that the first conjunct in conjoined sentences terminates with rising intonation, and that the final one receives falling intonation.

The declarative sentence (22) is derived from a structure like (23).

(22) Elle vient.

She is coming.

(23) # (elle vient) #

If the conjoined paraphrase argument is maintained and if Langacker's proposal regarding YNQ is employed, then (24) must come from a structure like (25).

(24) Elle vient?

Is she coming?

(25) Q (WH + OR (elle vient)) (NEG (elle vient))

In other words, (22) and (24) have radically divergent deep structures -- (23) and (25) respectively.

In current methodologies of grammatical analysis, the similarity in meaning of sentences like (15)-(17) and the simplicity of derivations like (13) override considerations of the superficial similarity of (22) and (24). It can be argued that (25) is an exaggerated underlying structure for (24). The relative complexity

of (25) as compared with (23) is not only a reflection of formal linguistic manipulations but is also the result of attempts to specify, in symbolic terms, the indeterminate nature of interrogatives. A person uttering sentence (24) may well have in mind a general situation which has several solutions. The utterance of (24) is a statement of the mental (or other) disequilibrium formalized, albeit quite crudely, in (25). This appeal to cognitive processes does not, however, supercede the linguistic requirements placed upon analyses of this type, and as shown by a reiteration of Langacker's arguments, the analysis given in (25) is well taken: a conjunctive analysis of YNQ correctly assigns appropriate intonation patterns to two superficially diverse sentences with a minimum of additional processes.

Two apparently contradictory statements in Langacker (1971:10) reveal that intonation assignment made in this way is more a product of the methodology than an accurate description of internal consistency. Langacker first states: "I have serious doubts that there is any such thing as question intonation," but then astonishingly says on the same page: "I would like to suggest that a similar analysis (i.e. the conjunctive derivation of IQ) may be appropriate for question intonation in French." If there is no consistent intonation pattern associated with questions, there can be no "appropriate" derivation of "question intonation" when that derivation is related to other regular intonation patterns. That is, if there is no consistent pattern, then those particular instances of "question intonation" which parallel conjunctive intonation cannot

be part of the conjunctive system. The convergence of the two is random, accidental and therefore unrelated. This does not mean that intonation patterns do not form a sub-system in themselves. It does mean that Langacker's analysis sits on a shaky foundation because it makes generalizations which he admits are probably fabrications. He did, however, allow for modification of his scheme (1971:11):

Let me close this section on a cautionary note.
I do not *claim* that question intonation is the same
as that of non-final conjoined clauses, I only
speculate that this is the case.

The fundamental difficulty with this scheme is that it implies unique relationships between intonation patterns (pitch rise and fall as well as general contour) and syntactic patterns. Bailey (1970) cites ample evidence to show that occurrence of a particular intonation pattern in English is dependent upon a number of independent non-linguistic factors.

He cites, among others, examples (26) and (27).

(26) bet
 ter.
 You'd

(27) beaut
 iful.
 It's

He says that (26) "has a defensive air resulting from the combination of the reluctant attitude expressed in this cadence and the lexical content of the example." On the other hand, (27), with the same (high falling cadence) pattern "has a playful tone because of the contradiction between the enthusiasm ordinarily indicated by *beautiful*

and the semiconclusive cadence." That is, the combination of verbal groups and intonation can be manipulated in various ways by the speaker.

4.3 Intonation questions and conjunction -- Hirschbühler's proposal

Hirschbühler (1970) independently proposed a very similar analysis for French YNQ intonation. He supplies (p.100) the sentences (28)-(30).¹⁰

(28) Pierre est-il malade ou Pierre n'est-il pas malade?

Is Peter sick or is Peter not sick?

(29) Est-ce une pomme que Pierre mange ou n'est-ce pas une pomme?

Is it an apple that Peter is eating or is it not an apple?

(30) Est-ce une pomme que Pierre mange?

Is it an apple that Peter is eating?

In (28) and (29) the nonfinal conjuncts have rising intonation and the final ones have falling intonation. Hirschbühler's

¹⁰The arguments presented here are based on Hirschbühler (1970). A similar, although less detailed, proposal appears in Hirschbühler (1971).

The intonation bars on these sentences have been added here for clarity and indicate rising or falling pitch contours rather than detailed distinctions of relative pitch height or the point at which highest pitch level is attained.

I have attempted to correlate Hirschbühler's prose description with the scheme outlined by Delattre (1969). The notation here differs from Hirschbühler because the only copy available to me has not been reproduced clearly enough for interpretation. I assume that Hirschbühler adopted Zwanenburg's (1965:5-6) notation. Later in this chapter some discussion of recent investigations by Delattre is presented. Since Zwanenburg and Delattre do not disagree, I further assume for the moment, that Hirschbühler's basic observations are correct. Evidence to falsify his interpretation is presented in this section and in section 4.4

Hirschbühler's terms "disjonction" and "disjonctive" are synonymous with "conjunction" and "conjunctive" here.

analysis is summed up (p.100):

Le morphème Q - auquel doit correspondre une intonation particulière - se place sur le mot précédant *ou*, mot qui doit aussi être le support de l'intonation propre aux disjonctives; si la disjonction ne concerne qu'un des syntagmes d'une proposition, c. à d. s'il y a un syntagme focalisé, alors Q doit se placer sur ce syntagme qui est aussi le support de l'intonation propre aux disjonctives.

The details of this analysis are more open to question than those of Langacker's because Hirschbühler implies specific claims about the nature of the interrogative morpheme *Q*. His first assumption is that there *must* (*doit*) be a particular intonation associated with interrogatives. There are two interpretations of this statement: either he is making a universal claim, or he is restricting himself to French data. If the statement is taken on a universal plane, then it is at least premature, if not mistaken. Ultan (1969) has shown that "most languages (perhaps all?) also have *Q*-utterances distinguished from their corresponding declarative utterances solely by means of *Q*-intonation," but he carefully refrained from insisting on an all-inclusive generalization (note "most"). Classification of these languages led to the generalization (p.46-47) that questions have "higher pitch (register or glide) or more prominent stress at some point in the contour, usually towards the end, as opposed to falling or low-pitched ultima in simple declarative statements." These observations by Ultan only refer to the possibility of distinguishing two sentences on the basis of intonation alone. He makes no reference to a necessary link between semantic content (*Q* morpheme) and intonation.

Even if Hirschbühler's assumption is restricted to French, there is a clear set of counter examples, the so-called *est-ce que* questions.

(31) Est-ce que Paul vient?

Is Paul coming?

(32) Est-ce que Pierre mange une pomme?

Is Peter eating an apple?

Sentences (31) and (32) are both YNQ with final falling intonation.

Both of these sentences can occur with final rising intonation. Under these conditions there is a slight change in the expressive value of the sentences. Rising intonation indicates more interest or a polite attitude while a falling intonation reflects lack of interest or deliberate rudeness.¹¹ Sentence (33) is an example with rising intonation.

(33) Est-ce qu'il reste encore de la neige?

Is there still snow left?

The rising intonation of (33) reflects an attitude of interest and is attributable to the semantic content of the sentence. Therefore a sentence of the same syntactic type as (31) and (32) can have at least two different intonation contours and it is evident that there is no unique connection between interrogatives (*Q* morpheme) and intonation patterns although intonation can provide at least some of the overt linguistic marking for questions.

The second part of Hirschbühler's argument asserts that *Q*

¹¹I am grateful to B. Rochet for pointing out this contrast to me.

is affixed to the focused constituents (syntagmes) or conjunctives, and that the presence of *Q* determines the rising intonation. The occurrence of rising intonation in both (30) and the first conjuncts of (28) and (29) is then due to the fact that they are both focused.

This analysis rests upon the assumption that *Q* is a segmental element and that its presence is responsible for the location of highest pitch in the sentence. If this were so then sentence (34), which can occur with falling intonation, should have rising intonation.¹²

(34) Elle aime  qui?

Who does she like?

Hirschbühler is correct, however, in assuming that the presence of focus plays a significant role in the selection of the intonation contours and location of maximum pitch level of interrogatives (and other sentences). He supplies the following set of sentences showing relative levels of intonation change (p.101):¹³

¹² Apart from the general possibility of sentences like (34) occurring with either rising or falling intonation, there is variation between particular individual sentences. Sentence (34) is more likely to occur with rising intonation since the lexical items and syntactic pattern imply focus and therefore are usually associated with echo (rising) intonation. Other sentences, such as (F)

(F) Il vient quand?

which have an identical syntactic pattern do not show the same tendency and probably occur with falling intonation more frequently than does (34). The difference between (F) and (34) with regard to intonation patterns seems to be controlled by the lexical (semantic) content. The relationship between lexical items and intonation is a further area which might be fruitfully examined.

¹³ In (35) and (36) the contrast between the curves  and  is adopted from Delattre and is intended to reflect the difference in rate of pitch rise. Some discussion of this distinction appears below.

- (35) Pierre mange une pomme, ou Pierre ne mange pas de
pomme.

(Either) Peter is eating an apple or he
isn't eating an apple.

- (36) Pierre mange une pomme, ou Pierre ne mange pas de
pomme?

Peter eats an apple or Peter doesn't eat an
apple. (Out with it. Which is it?)

Of these sentences Hirschbühler says "Dans l'interrogative l'intonation montante nous paraît nettement plus forte que dans l'assertive."

(p.101). That is, the pitch rise on *pomme* in (36) is more marked than it is in (35).¹⁴ This difference is sufficient to distinguish the declarative (35) from the interrogative (36). Hirschbühler attributes the relatively high intonation level of (36) to the presence of both *Q* and regular disjunctive intonation (at *pomme*). Each of these sources presumably contributes to the pitch rise from which there derives an increased distortion from the declarative pattern.¹⁵

If the intonation difference between (35) and (36) is at least partially due to the presence or absence of *Q*, then there is no a priori reason to include any other source for the difference.

¹⁴It is also possible to have falling intonation on the first clause of (35) but not in (36).

¹⁵There is some disagreement among native speakers about the acceptability of sentence (36). Some speakers concur with Hirschbühler. Some disagree and characterize it as "étrange", "d'un mauvais style" or "synthetic."

If *Q* supplies part of the stimulus for intonation rise, it might well supply all of it. In view of this suggestion Hirschbühler's proposal might be modified. The rules which assign intonation contours to strings could be constructed in such a way as to assign certain pitch changes in specific environments. The fact that non-final members of conjunctive sequences and some YNQ both show rising intonation would, then, be an accidental parallel which is an exclusively surface phenomenon. This alternative would simplify the derivation of YNQ because only one intonation assignment would occur for each derived string, whereas in Hirschbühler's analysis two such assignments would occur. Hirschbühler's double assignment would then be the result of misinterpretation of the surface similarities between two separate intonation types. Since Langacker does not posit a dual source for the intonation of *IQ* his proposal does not suffer from a double assignment of intonation. However, it is argued below that both the Hirschbühler and the Langacker analyses result from misinterpretation of superficial similarities.

Langacker and Hirschbühler require that at least part of the phonological component (intonation assignment) apply before syntactic rules. Hirschbühler's scheme is confusing in this regard because it involves an ordering problem. Conjunctive intonation is assigned before deletion of the second member in the conjunction. Since inverted sentences like (37) have the intonation peak on the last syllable, *Q* intonation would have to be assigned *after* inversion.

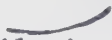
(37)  Vient-il?

Is he coming?

Nevertheless, if *Q* is responsible for this peak by attracting intonation features to the constituent to which it is attached, inversion must also apply *before* intonation assignment. At some stage in the derivation of (37) there is a sequence like (38).

(38) # il vient #

If intonation assignment precedes inversion, then (39) would result.

(39)  il vient

Since (39) is a grammatical surface question no problems arise. However, if inversion then applies, ungrammatical (40) will be derived.

(40)  *Vient il?

Therefore there must be two points in the derivation of YNQ at which intonation assignment occurs if (37) is to be derived correctly.

It might be asserted that all intonation assignments are made at a single point (preinversion) and that, employing Hirschbühler's clitic fusion rule mentioned below (section 5.4) *il* is dominated by the same node which dominates *vient* (so that *il* and *vient* are sister nodes). Intonation assignment could be made to the parent node of this structure (VP) and final superficial rules would distribute intonation to each of the daughter nodes (*il* and *vient*)

with the right-most daughter receiving the intonation peak and all prefinal syllables receiving regressively diminishing pitch values. This proposal is just another version of the two stage intonation assignment, and does not in any way remedy the problem.

If *Q* intonation assignment must follow inversion but conjunctive intonation assignment must precede conjunct deletion, an ordering paradox results. This difficulty can best be seen by adopting Langacker's underlying conjunctive structure and progressing towards a surface structure using rules like Hirschbühler's in various orders. The first ordering is that implied by Hirschbühler.

- (41) a. *Q* OR (*il vient*) NEG (*il vient*)
 b. Conjunction distribution →
 Q OR (*il vient*) OR NEG (*il vient*)
 c. *Q* attachment (to focused node) →
 OR (*il Q* + *vient*) OR NEG (*il vient*)
 d. *Q* intonation assignment (disjunctive and *Q*) →
 OR (*il vient*) OR NEG (*il vient*)
 e. *Q* conjunct deletion → (should be blocked by
 OR (*il vient*) OR NEG either c. or d.)
 f. *Q* OR - NEG deletion →
 il vient?

A second ordering is (42):

- (42) a. as in 41 a.
 b. as in 41 b.
 c. as in 41 c.
 d. Conjunctive intonation →

OR (il Q + vient) OR NEG (il vient)

- e. Conjunct deletion: cannot apply because after d. the conjuncts are no longer identical.

Even though the output of (41 f) is identical to (39) the derivation will not work. Inversions like "vient-il?" are prohibited by (41) because, as we have seen, they require that intonation be assigned after inversion, (41 d) assigns *Q* intonation before inversion.

Furthermore, once either *Q* attachment or intonation assignment applies the environment for conjunct deletion is not properly met.¹⁶ If the conjunctive analysis is to survive, intonation assignment and *Q* attachment cannot be ordered after conjunct deletion because first conjunct intonation would not apply.

Even if it is argued that conjunctive intonation does not block conjunct deletion, *Q* attachment changes the meaning and would thereby remove the string from the scope of conjunct deletion. This change is shown by the surface sentences (43) and (44).¹⁷

(43) Paul vient.

Paul comes.

¹⁶This assumes, reasonably, that conjunct deletion deletes one of two identical conjuncts. The presence of a *Q* or distinctive intonation patterns in one renders the conjuncts dissimilar.

¹⁷A similar difference is exemplified in (G) and (H) and is the reason NEG placement is not mentioned in the derivation in (43).

- (G) OR (John is coming) OR NEG (John is coming)
 (H) OR (John is coming) OR (John is not coming)

Langacker's derivation (1970:150) also avoids application of NEG. placement, which is unnecessary in his derivation in any event.

(44) Paul vient?

Is Paul coming?

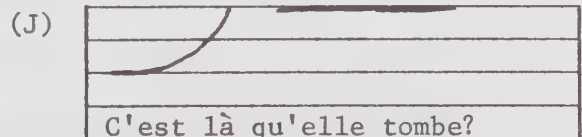
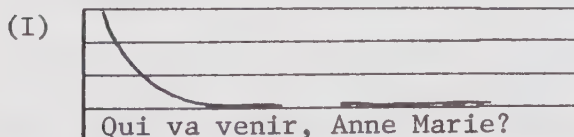
Since *Q* attachment applies to only one member of a conjunctive pair, the two conjuncts under consideration become nonequivalent after *Q* attachment and conjunct deletion cannot operate.

4.4 Conjunction refuted

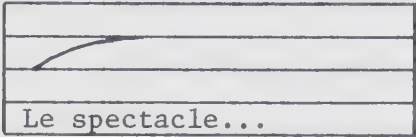
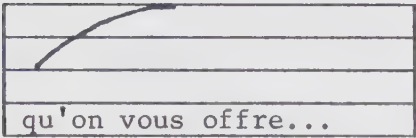
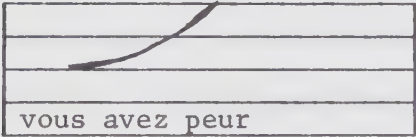
The hypothesis that IQ can be derived from underlying conjunctive sentences must be rejected on other grounds in any event. Hirschbühler's analysis recognizes a difference between nonfinal rising intonation and question intonation. Delattre, in a series of articles (Delattre, 1966, 1967, 1969, 1970)¹⁸ has demonstrated that this is in fact the case. He distinguished (among others) a difference between "continuation majeure" 'major continuation' (MJC), "continuation mineure" 'minor continuation' (MNC) and "question intonation" (QINT) as three functionally distinct types of rising intonation. Both MJC and MNC appear in connection with nonfinal syntactic groups. QINT usually appears on final (or preparenthesis) constituents.¹⁹

¹⁸I am grateful to JoAnn Creore and Bernard Rochet for pointing these articles out to me.

¹⁹According to Delattre the parenthesis curve does not undergo modification. It is a contour which maintains the same pitch level throughout:



Apart from this distributional difference (which does not differ from Hirschbühler's and Langacker's observations) there is a qualitative difference. MJC and MNC are characterized by "pente décroissante" or decreasing pitch slope (although ascending) and QINT is characterized by a curve "à pente croissante" or increasing (and ascending) pitch slope. These three are illustrated using a four level scale in (45)-(47). (Delattre 1969).

- | | | |
|------|---|-------------------------|
| (45) |  | continuation
mineure |
| (46) |  | continuation
majeure |
| (47) |  | question |

Hirschbühler attributed this difference to the phonological interpretation of a segmental *Q*. It was shown in Chapter II (sec. 2.9) above that *Q* cannot have segmental status in any event. Even if *Q* did have such a status it is impossible to see what value it would have for IQ in French. If there is an underlying *Q* associated with a string and if there is no other (syntactic) device marking the derived string as a question, the string becomes an IQ. That is, QINT can be assigned *after* all other interrogative transformations have had a chance to apply. QINT is therefore dependent not only on

an underlying *Q* morpheme, but also on the surface syntactic configuration.

Zwanenburg (1965:102) has provided a correlation between certain syntactic categories and positions and nine different intonation contours. The contours are:

- (48) a. [`] high falling (*grande chute*)
 b. [`] low falling (*chute inférieure*)
 c. [´] high rising (*montée supérieure*)
 d. [´] low rising (*montée inférieure*)
 e. [!] extended high rising (*montée supérieure étendue*)
 f. ⁻ high level (*ton statique aigu*)
 g. ⁻ medium level (*ton statique moyen*)
 h. ^{_} low level (*ton statique grave*)
 i. ^{_/} delayed low rising (*montée inférieure retardée*)

The syntactic categories are interrogatives, simple declaratives (*phrases énonciatives*), and compound declaratives (*phrases continuatives*). He makes a further distinction between sentence final, phrase final and phrase internal positions.

Zwanenburg subdivides interrogatives into IQ, syntactically marked questions and others. This latter category does not bear any overt structural marking relating it to a *Q*. We are told (p.61) that it is only the discourse context which makes the sentence a question: "Le sujet parlant avance quelque chose qu'il croit probable et en attend une confirmation de la part de son interlocuteur."

The following table presents a summary of Zwanenburg's correlations:

(49)

intonation type sentence type		SENTENCE FINAL					PHRASE FINAL	PHRASE INTERNAL
		interrogative			simple declarative	complex declarative		
		IQ	syntactic					
			other					
、 high falling			X			X		X
、 low falling			X		X			X
、 high rising		X		X			X	
、 low rising		X			X		X	
、 extended high rising		X						X
、 high level								X
、 medium level								
、 low level							X	
、 delayed low rising								
sequences			--	--		--, ' --		

In view of the distributional facts revealed in (49) Zwanenburg concludes that there is no unique correlation between sentence/grammatical categories and intonation features. He says (1965:46) "...aucun de ces trois éléments: indications de la couche verbale ..., pauses et mélodie, ne peut être interprété sans qu'on tienne compte des autres." The occurrence of extended high rising intonation (') is limited to IQ and phrase final intonation in (49). This co-occurrence could be construed as evidence supporting the Langacker and Hirschbühler conjunctive source of IQ except that at least some of the occurrences of phrase final ' are not conjunctives.²⁰

(50) a. Et vous n'en ferez pas du *tout*, moyennant quoi?

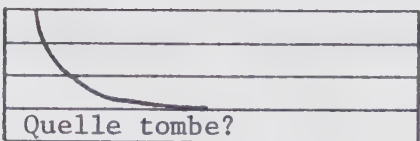
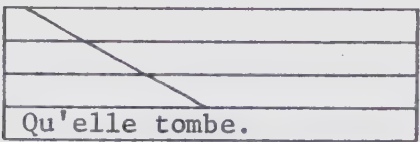
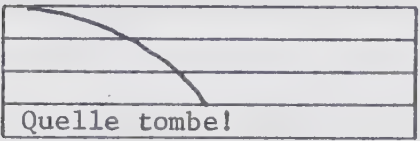
[evunãfrep̄adyt'umoyɛnãkw'a]

b. Ça *marche*, en ce moment?

[sam'arsãsmɔm'ã]

Since intonation assignment is the result of the interplay of several factors no intonation contour can be uniquely associated with an underlying interrogative meaning. A similar idea is suggested in Delattre (1970:4) where it is argued that three acoustically distinct intonation curves associated with interrogation, command, and exclamation do not *function* distinctively. The differences are illustrated in (51)-(53).

²⁰These examples are from Zwanenburg (1965:77 and appendix, 6 and 11). The original transcription is preserved.

- (51)  Interrogation
Quelle tombe?
- (52)  Command
Qu'elle tombe.
- (53)  Exclamation
Quelle tombe!

Delattre says (1970:4):

...[these] three curves have slightly different shapes, as indicated in (51)-(53) but their differences are not sharp or stable enough to be clearly identified without content. They may therefore be considered as three allotones of the same intoneme. The three meanings are distinguished from one another by syntax rather than by intonation..

While Delattre claims that some factor other than intonation is required to differentiate each of the examples (51)-(53), at least some speakers can do so on the basis of intonation alone. One could argue that since there are differences in the physical signals corresponding to semantic differences the former do fulfill a distinctive function. Delattre's conclusions are based on his not having found factors which are "sharp or stable enough" to be independently distinctive. This does not mean that such factors do not exist. This problem is best interpreted as an area requiring further investigation. If the intonation contours are usually associated with some other signalling devices, what are these and why are the two

aspects sometimes separable? Are there specifiable conditions?²¹

4.5 Conclusion

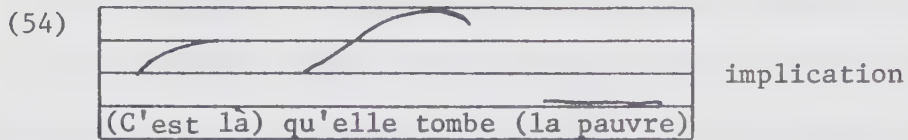
The conjunctive source of IQ in French is therefore mistaken on two grounds: 1) the acoustic facts do not coincide. That is QINT and non-final ascending intonation (major and minor) are physically distinct. 2) The formal derivation of the appropriate syntactic environment for IQ forces the conclusion that intonation is assigned to derived syntactic structures and cannot relate to underlying syntactic configurations.²²

However, intonation assignment does not depend only on surface syntactic constructions. It relates to presuppositional and paralinguistic data. Delattre proposed that intonation curves could be grouped into ten different types which could then be reduced to seven distinctive (functional) intonemes. Each of these intonemes is usually associated with particular syntactic constructions: questions, non-final phrases, parenthetical sequences and so on. Nevertheless, intonemes are not necessarily restricted to a particular syntactic unit and, in fact, interchange between various intonemes alters meaning in particular ways. These meaning changes portray attitudes

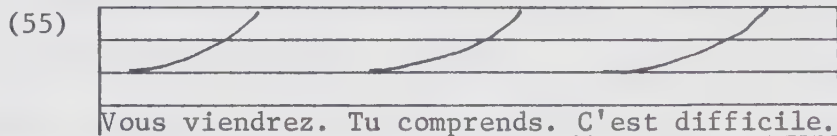
²¹I am indebted to B. Rochet for discussion of these difficulties.

²²This implies an additional failure in Stockwell's (1960) analysis because he had proposed an underlying intonation node which could then be distributed over derived (intermediate) strings. Since no intonation pattern can be uniquely associated with syntactic configurations (transformational derivations) it would be impossible to specify the intonation pattern in underlying syntactic representations.

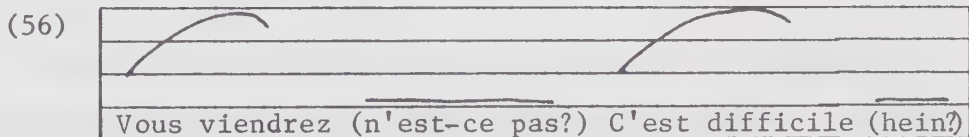
of the speaker and the like. Delattre (1970:5-6) provides two sets of illustrative examples involving the question curve and the implication curve. The former was illustrated in (47) above. The implication curve which resembles the major continuation curve (46) "tends to slack toward the end". (Delattre, 1970:4):



The first set of alternating examples are IQ:



If the implication curve is applied to the same segmental sequences, the affective meaning changes from simple interrogation to a request for agreement:



The contrasting set of examples is supplied by inversion questions:²³



²³Delattre calls them "questions without redundancy."



With an implication curve these 'same' sentences express "exasperation and no yes-or-no answer is expected." (Delattre, 1970:6)

These examples also show a direct interplay between syntax and intonation. In (56) the structures retain some of the interrogative meaning found in (57) whereas this meaning is lost between (57) and (58) which have syntactic markers of interrogativity. It is, therefore, the syntax which determines whether an implication curve over an interrogative structure expresses a request for agreement or exasperation. Intonation and syntax both play a role in determining the message conveyed by an utterance. It is the total complex of surface features (syntactic configuration and intonation contour) which is the surface representation of the underlying semantic interpretation, however the latter is represented.

Atomistic analysis and study of any single aspect of the surface sentence without due regard to other factors will not yield satisfactory descriptions. The need for more general approaches to analysis is further emphasized by the fact that Zwanenburg finds a class of interrogatives which have no internal linguistic mark to set them apart from declaratives but which function as questions in context. While studies which accept a wider variety of input data are necessary, detailed analysis in particular areas should not be sacrificed. For example, the development of an extensive treatment of the interaction between interrogatives and intonation can only be

carried out within a detailed study of all intonation patterns and all syntactic configurations in French. Bailey (1970:522) stated that "Intonation functions both to delimit grammatical constituents and to confer an attitudinal intention on what is said". The direction of research in this area is therefore clear. Léon (1971:19) phrased this direction as a hope:

On pourrait souhaiter enfin...que soient constitués pour chaque langue des dictionnaires d'intonation. Sous chaque entrée d'un intonème on trouverait 1) sa signification dans un cadre syntaxique, 2) sa valeur sémantique dans le système des traits prosodiques et paralinguistiques.

CHAPTER V

FRENCH INTERROGATIVES: INVERSION

	<u>Page</u>
5.0 Introduction	180
5.1 Inversion questions	180
5.2 Complex inversion: the problem	188
5.3 A copying solution: its task	191
5.4 A transformational solution	202
5.5 Dislocation, reduplication and focus	205
5.6 Focus, repeated elements and underlying structures	217
5.7 Reduplication and complex inversion	222
5.8 A PS solution	224
5.9 Clitic conversion and 'subject' insertion	229
5.10 Conclusion	237

CHAPTER V

FRENCH INTERROGATIVES: INVERSION

5.0 Introduction

Besides IQ discussed in Chapter IV, French has an intricate set of questions derived by inversion. This chapter examines various proposals to account for the distributional features of inversion questions. These proposals include copying NPs in post-verbal position, preverbal clitic formation, phrase structure generation of two-part subject NPs containing both nouns and clitics, and finally, transformational insertion of phonological [iʔ] in specifiable syntactic environments. The proposed solution is a synthesis of aspects of each of the individual proposals.

5.1 Inversion questions

Inversion questions present the same intonation patterns and the same gross semantic effects as intonation questions. It is therefore reasonable to expect that they derive from similar deep structures. A comparison of (1) and (2) shows that the two types are closely related.

(1) Ils viennent?

Are they coming?

(2) Viennent-ils?

Are they coming?

Robin Lakoff's (1969) position, however, that synonymous sentences are those that can be uttered in the same environments, would preclude a common source for (1) and (2). Both request the same information and are essentially paraphrases, but there are stylistic differences between them.¹ Intonation questions are used colloquially and in casual conversation whereas the inverted counterparts are more formal.² An exhaustive analysis representing all facets of meaning in the underlying structure of interrogatives would be responsible for cataloguing these differences and for providing appropriate categories of features in the underlying structures. All aspects of an individual's linguistic behavior would have to be incorporated in such a scheme. Hymes (1972:51) says "At this juncture we are still attempting to ... adequately record what is there in acts of speech." This statement can be applied both to explicitly "linguistic" units as well as to the broader area of paralinguistic references, context and social content. As outlined in Chapter III these problems are related to the grammar of usage and will not be

¹There also exists a third "neutral" alternative: the so-called *est-ce que* questions. These are discussed in considerable detail in Chapter VI.

²Native speakers characterize the inverted questions as "stilted" or "precise" when comparing (1) and (2). Bernard Rochet has suggested to me that there may well be some correspondances between interrogative styles and broader social phenomena. A study of any such correlations might prove fruitful and would help to supply the information required by R. Lakoff's definition of synonymity. Such a study would fill some of the gaps indicated in Chapter III. This kind of study is obviously related to the general paralinguistic and extralinguistic data required for complete systematization of intonation discussed in Chapter IV. Some attempts in this direction appear in Fromaigeat (1938) and Terry (1970).

dealt with here. Our purpose is to present an analysis of the formal characteristics of the elements in the narrow linguistic structure.

The specific formal restrictions relating to inversion questions will be developed systematically below. The interrogatives in (3 b) and (4 b) are examples of the simplest type of inverted questions.

(3) a. Il est venu.

He came.

b. Est-il venu?

Did he come?

(4) a. Nous chantons.

We sing.

b. Chantons-nous?

Do we sing?

Simple inversion reorders the subject pronoun and the verb or auxiliary. Since it is the auxiliary (*AUX*) which carries the tense and the number markers (*Ils sont venus* vs. *Il était venu*) whenever it is present as an independent morpheme in surface structure, we can see that the inversion is SAI. Since the verb carries the number and tense markers in other instances *AUX* may be considered a sub-category of the node that dominates the verb.³

The ungrammaticality of (b) in (5) and (6) shows that only pronoun subjects can be inverted by SAI, and that noun subjects are represented by an apparent reduplicated pronominalized equivalent

³See Ross as per Langacker (1969:2) for a recent discussion of the auxiliary.

which undergoes the inversion instead.

- (5) a. Ta soeur vient.

Your sister comes.

- b. *Vient ta soeur?

'Comes your sister?'

- c. Ta soeur, vient-elle?

'Your sister, does she come?'

- (6) a. Les soldats ont tué un enfant.

The soldiers killed a child.

- b. *Ont les soldats tué un enfant?

- c. Les soldats, ont-ils tué un enfant?

'The soldiers, did they kill a child?'

Did the soldiers kill a child?

Langacker (1965:589) attempted to account for the above data with a series of three transformations which perform the following operations:

- a. Reduplication - copies the subject NP in postverbal position.
- b. Pronominalization - pronominalizes the second member of a pair of identical NPs if it is not already a pronoun.
- c. Ellipsis - deletes the first member of a pair of identical NPs. Ellipsis applies obligatorily to strings to which pronominalization did not apply. Otherwise it is optional.

Hirschbühler (1970) points out that while intended for the derivation

of (7)-(12) these transformations do not permit all three of (10), (11) and (12).

(7) Où mange-t-il?

Where does he eat?

(8) Où Paul mange-t-il?

Where does Paul eat?

(9) Où mange Paul?

Where does Paul eat?

(10) Où a-t-il mangé?

Where did he eat?

(11) Où Paul a-t-il mangé?

Where did Paul eat?

(12) Où a mangé Paul?

Where did Paul eat?

The verb consists of an auxiliary (tense carrier) and a verb stem. If the auxiliary member of the verb inverts with the subject NP, then (10) and (11) result but (12) is excluded. One solution to this problem might be to evolve a second reduplication and an obligatory deletion transformation for questions like (12) in the compound tenses. Hirschbühler (1970:41) criticizes this tentative solution on the grounds that it destroys the unity of the reduplication process shown in Langacker (1965) and that non-pronoun subjects are treated differently according to the type of questions involved.

Kayne (1972) interprets (10)-(12) as indicating the necessity for two inversion transformations: one for pronoun subjects

(clitics)⁴ and the other for noun subjects. The former he calls SUBJ-CL-INV which consists of "a simple interchange of the pronoun and the verbal form with which it is in contact" (p.2). Noun inversion, or STYL-INV (stylistic inversion) transports the subject NP to sentence-final or VP final position. Sentences (10) and (11) are derived by application of SUBJ-CL-INV and (12) is the product of STYL-INV.

The basic evidence for distinguishing the derivations of (10)-(12) is found in the patterning of clitics and NPs in the following situations:

1. Only clitics can be inverted in YNQ.

(13) a. *Partira ce garçon,

b. Partira-t-il?

Will he leave?

2. Clitics can invert following *pourquoi* but NPs cannot.

(14) a. *Pourquoi part ce garçon,

b. Pourquoi part-il?

Why will he leave?

3. Certain (as yet unspecified) verbal complements prevent NP inversion while permitting SUBJ-CL-INV.

(15) a. *Depuis quand est ton ami malade?

b. Depuis quand est-il malade?

How long has he been sick?

⁴Kayne (1969, Chapter 2) demonstrates that subject and preverb object pronouns behave differently from noun subjects and objects. He argues that the differences are important enough to indicate that they have different constituent structures. He claims that the pronouns are part of the VP and are therefore called clitics to distinguish them from NPs.

(16) a. *A quelle heure changera cette fille d'avis?

b. A quelle heure changera-t-elle d'avis?

At what time will she change her mind?

(17) a. *Quand deviendra ce comédien célèbre?

b. Quand deviendra-t-il célèbre?

When will he become famous?

Supporting evidence for this dichotomy of transformations is provided by embedded interrogatives which permit STYL-INV but not SUBJ-CL-INV:

(18) a. Je sais très bien à quelle heure partira ce garçon.

I know very well at what time this boy will leave.

b. *Je sais très bien à quelle heure partira-t-il.

STYL-INV is also applicable in relative clauses, while SUBJ-CL-INV is not:

(19) a. La maison où habite cet homme est très jolie.

The house in which this man lives is very pretty.

b. *La maison où habite-t-il est très jolie.

Kayne proposes on the basis of these arguments that part of the environment for STYL-INV must be sentence initial *WH*. It can be readily seen that this is the case in (12), (13) and (14). He offers the exclamatory sentences (20) as additional support for the *WH* condition.

(20) a. Quel plaisir m'a fait son discours!

How his speech pleased me!

b. *Quel plaisir m'a-t-il fait!

It then becomes evident that only the semantic concept "question" figures in the environment of SUBJ-CL-INV and that the presence of *WH* in (12) and (13) is incidental and has no bearing on the derivation of an inverted subject clitic (pronoun). This same condition accounts for the non-inverted NPs in (15), (17) and (21).

(21) a. *A quoi joue cet homme mieux que toi?

b. A quoi joue-t-il mieux que toi?

What does he play better than you?

The superficial *WH* in initial position in (17) derives from a verbal complement and it acquires its surface position transformationally.⁵ Embedded clauses introduced by *si* "if, whether" do not undergo STYL-INV:

(22) *Ils se demandent si vont chanter les oiseaux.

This fact leads Kayne (p.11) to claim that *si* is not a *WH* word⁶ but ought to be considered as an unpreposed conjunction.

All of these arguments and conditions are the basis for the ungrammaticality of sentences with inversion of nouns as in (5 b)

⁵This movement presumably follows STYL-INV although Kayne does not comment on this particular aspect.

⁶The fact that SUBJ-CL-INV does not apply in the identical environment provides basis for arguing (as I do in Chapter III) that so-called embedded interrogatives are not interrogatives at all.

"*Vient ta soeur?". That is, they supply the descriptive features distinguishing (23) and (24) because YNQ do not contain a *WH* element.

(23) Partira-t-il?

Will he leave?

(24) *Partira ce garçon?

Kayne's set of two inversion transformations overcomes the problems inherent in (10)-(12) and simultaneously provides a basis for differentiating the behavior of subject clitics and subject noun phrases. It therefore is more highly valued than Langacker's reduplication procedure and should replace it.⁷

5.2 Complex inversion: the problem

Since questions like (25) are derived in part by application of Langacker's reduplication transformation, rejection of his proposal requires a new analysis of them as well.

(25) Ton ami partira-t-il?

Will your friend leave?

Traditionally YNQ like (25) have been described as containing an inverted pronominal form of the subject (NP). Grévisse (1959:133) called (25) an "interrogation complexe" and stated that:

Quand le sujet n'est ni un pronom personnel ni *ce*
ou *on*, il se place avant le verbe, mais on le reprend

⁷Langacker (1971, appendix) states: "His (Kayne's) arguments are well made and reasonably convincing, and I am inclined to accept his formulation of question inversion in preference to the one I proposed in 1965."

après le verbe par un pronom personnel: ...L'enfant
comprend-il? Votre mère viendra-t-elle?

Langacker's (1965) three step analysis (see above) essentially
reiterated this point of view.

Langacker (1971) calls questions of this type "disloca-
tions." Kayne (1972) uses the term "complex inversion" in describing
them. Kayne's terminology will be followed here.

There are a number of parallels between complex inversion
and SUBJ-CL-INV (see 13-17).

1. Complex inversion occurs in YNQ (cf. (5 c))

(5) c. Ta soeur, vient-elle?

Your sister, is she coming?

2. Complex inversion is grammatical with *pourquoi*:

(26) Pourquoi cette fille a-t-elle fait cela?

Why did that girl do that?

3. Complex inversion enjoys the same exemptions from
restriction by verbal complements.

(27) Depuis quand ce garçon est-il malade?

How long has this boy been sick?

4. Complex inversion and SUBJ-CL-INV result in the same
superficial subject clitic position.

(28) a. Où voulait-il aller?

Where did he want to go?

b. Où Jean voulait-il aller?

Where did John want to go?

c. *Où Jean voulait aller-il?

(29) a. Pourquoi a-t-il fait cela?

Why did he do that?

b. Pourquoi Jean a-t-il fait cela?

Why did John do that?

c. *Pourquoi Jean a fait-il cela?

5. Complex inversion cannot occur in embedded questions, relative clauses and clefts.

(30) *Je ne comprends pas pourquoi la maison s'est-elle écroulée.

(31) *Il sait très bien où cette fille habite-t-elle?

(32) *C'est à Paris que Marie-Yvonne habite-t-elle.

6. Complex inversion does not occur in exclamations introduced by *quel*.

(33) *Quel jolis visages ces filles ont-elles!

Because these parallel patternings between complex inversion and SUBJ-CL-INV contrast with STYL-INV in all cases, Kayne (1972:13) suggests that the two processes be merged. If they are not merged, then it is implied that these extensive parallels are accidental.⁸

There are three alternative means of collapsing complex inversion and SUBJ-CL-INV. Following Langacker's (1965) procedure it might be claimed that complex inversion is a reduplication or copying

⁸The methodology of contemporary generative grammar requires that parallel structures of this kind be treated as though a single transformation (or set of transformations) operated upon them. Deriving parallel structures by different transformations would implicitly claim that the similarity was accidental and that there is no generalization to be drawn from their overlapping behavior.

process. (34 b) would then be derived from (34 a).

(34) a. Quand Jean partira.

When Jean will leave.

b. Quand Jean Partira-t-il?

When will John leave?

The second and third alternatives would be to derive (34 b) from (35).

(35) Quand Jean il partira.

When Jean he will leave.

Sentence (35) could be an intermediate stage into which clitic *il* had either been inserted transformationally or the *il* could be generated by the phrase structure rules.⁹ Each of these possible solutions is discussed in the following sections.

5.3 A copying solution: its task

Independently of the derivation of complex inversions like (34 b), French requires a reduplication transformation (REDUP)¹⁰ to derive sentence sets like (36).

(36) a. Je vois votre frère.

I see your brother.

b. Votre frère, je le vois.

Your brother, I see him.

⁹Only the first two alternatives were proposed in the preliminary version of Kayne (1972) read in Gainesville, Florida on February 20, 1971. Kayne's position regarding the second alternative was modified in the final version so that he now favors PS generation of clitics.

¹⁰Kayne (1972) uses the term "detachment" and Langacker (1971) uses the term "dislocation" to describe this transformation.

c. Je le vois, votre frère.

I see him, your brother.

That REDUP is not related to complex inversion is evidenced by (37).

(37) a. *Quelqu'un, depuis quand m'attend-il?

b. *Depuis quand m'attend-il, quelqu'un?

c. Depuis quand quelqu'un m'attend-il?

How long has somebody been waiting for me?

Complex inversion can apply to sentences containing *quelqu'un*, but REDUP cannot.

In order to further argue against a reduplicated stage in complex inversion Kayne points out the following co-occurrence possibilities for NPs and their co-referential equivalent pronouns. Sentence pairs like (38 a,b) and (39 a,b) show that *il* is an acceptable pronominal form for *cela* and *ce que je dis* only in complex inversion.

(38) a. Pourquoi *cela* est-*il* faux?

Why is that false?

b. **Cela* est faux parce qu'*il* ne correspond pas à la vérité.

c. C'est faux, *cela*.

That's false.

d. *Pourquoi *cela* est-*ce* faux?

(39) a. Pourquoi *ce que je dis* te déplaît-il?

Why does what I say offend you?

b. **Ce qu'elle dit* ne nous intéresse pas et *il* ne

m'intéresse pas, moi non plus.

- c. *Ce que tu dis* n'intéresse personne parce que
c'est insensé.

What you say doesn't interest anyone because
it's senseless.

- d. *En quoi *ce qu'il dit* est-ce insensé?

Conversely the pairs (38 c,d) and (39 c,d) show that in the reduplicated construction the pronoun referent for the NPs is *ce* while *ce* cannot be the pronoun form in complex inversion. The same conditions on pronominal co-reference hold for sentential NPs:

- (40) a. *Que Jacques ait dit cela* ne vous intéresse-t-il
pas?

Doesn't it interest you that Jack said that?

- b. **Que Jacques ait dit cela* ne vous intéresse
sûrement pas et *il* ne m'intéresse pas, moi non
plus.
- c. *Que Jacques ait dit cela* ne vous intéresse
sûrement pas et *cela* ne m'intéresse pas moi non
plus.

That Jack said that certainly doesn't
interest you and that doesn't interest me
either.

- d. **Que Jacques ait dit cela* ne vous intéresse-ce
pas?

Furthermore there are a number of NPs which do not have

pronominal equivalents under any conditions except complex inversion.

Examples of these occur in the pairs (41)-(43).

- (41) a. Pourquoi *rien* n'est-il tombé?

Why did nothing fall?

- b. **Rien* n'est tombé parce qu'il était soutenu par
des clous.

- (42) a. Depuis quand tout est-il en ordre?

How long has everything been in order?

- b. **Tout* est en ordre aujourd'hui mais demain il
sera en désordre.

- (43) a. Pourquoi *assistance* a-t-elle été prêtée à une
personne si méchante?¹¹

Why was help given to such an ill-natured
person?

- b. **Assistance* a été prêtée à cette personne-ci
bien qu'elle n'ait pas été prêtée à celle-là.

A third aspect of NP - pronoun combinations is shown by sentences (44) and (45) which contain predicate nominals in preverbal (subject) position.

- (44) a. Depuis quand *ton meilleur ami* est-il Jean-Jacques?

How long has Jean-Jacques been your best
friend?

¹¹Kayne (1972) cites this example which is apparently an "archaic or ultraformal construction." Even if one rejects the example as contrived, the preceding sentences illustrate the restriction on pronoun equivalents of NPs.

- b. **Ton meilleur ami* est maintenant Jean-Jacques,
mais il y a trois ans *il* était Michel.

(45) a. Pourquoi *ta meilleure amie* est-elle Anne-Marie?

Why is Anne-Marie your best friend?

- b. *On sait que *ta meilleure amie* est Anne-Marie,
mais à notre avis *elle* devrait être Jacqueline.

In these sentences the preverbal nominals have pronominal (clitic) equivalents only in sentences also having complex inversion. Since there is no motivation for it REDUP does not therefore enter the derivations of these sentences.

It is necessary to make a distinction between REDUP and copying (COPY). REDUP will be used to describe the process by which 'dislocated'/'detached' elements are permuted as in "Votre frère, il est venu." COPY will be reserved to describe the placing of clitics in postverbal position as in "Ta soeur, vient-elle?" Since REDUP cannot be used to derive complex inversions, there must also be a COPY rule which places the pronominal element in postverbal position. Such a rule must preserve only the person, gender (and number) features of the subject NP. Indefinite or demonstrative features, as exemplified in the above examples, have no reflection in the copied element (*il*). COPY could apply in the presence of *Q* and certain adverbs.¹²

There would then be two transformations, SUBJ-CL-INV and COPY, placing phonologically identical elements in syntactically

¹²These adverbs are *à peine*, *sans doute*, *peut-être* and several more. For a detailed listing see LeBidois and LeBidois (1968, II; Chapter 2).

equivalent environments. The former would simply operate as a "pure inversion" upon preverbal clitics under appropriate syntactic conditions. COPY would be responsible for converting an NP to a clitic form and placing it in postverbal position. This is essentially a reiteration of Langacker's (1965) position with the added burden of duplication of process.

Kayne offers three arguments to indicate that copying is an improper analysis. One involves the appearance of a singular third person pronoun *on* in sentences like (46) where *nous*, as in (47), is expected.

- (46) Pourquoi *Jean et moi* ne devrait-on pas partir tout de suite?

Why shouldn't John and I leave right away?

- (47) Pourquoi *Jean et moi* ne devrions-nous pas partir tout de suite?

Why shouldn't John and I leave right away?

Kayne's argument is not reported in full but the central issue appears to be that number agreement is lost in the alternation between *nous* and *on*. A COPY source of inverted *on* in (46) would not preserve number. Furthermore the loss of number agreement appears to precede inversion of the copied segment (i.e. *on*) because the verb takes singular inflections. Langacker points out that this argument assumes subject-verb agreement is a left to right process, an assumption which he characterizes as an "artifact of the history of transformational grammar, a very suspicious one at that." (1971:

appendix, 46). Kayne refers to an argument, but does not give it, which describes the *nous ~ on* alternation in other terms. It is not unreasonable to assume that the description is part of Kayne's PS proposal (cf. section 5.8 below).

However, it is not immediately clear how the *nous ~ on* alternation can be treated independently of other factors. *On* does not alternate solely with *nous*. As Lampach (1965:84) says "its meaning being extremely flexible, it [*on*] is very widely used in everyday French to represent virtually any person or persons." Lampach (1965:84-85) provides the following examples to show alternations between *on* and other forms.

- (48) Moralistic "one":

On ne dit pas cela(ça).

One doesn't say things like that.

- (49) *Quelqu'un*:

On a renversé l'encre.

Somebody spilled the ink.

- (50) Discreet *je*:

Peut-on savoir où se trouve...?

Can you tell me where...?

- (51) Depreciative or sarcastic *tu*:

Eh, bien! On a fait encore une bêtise!

Well now! You've blundered again!

- (52) *Il* or *elle* in certain contexts: e.g. having sent someone to see if someone is working;

Eh, bien! On travaille là-bas?

(Well now! Is he/she working there?)

(53) *Nous*: This sense is extremely frequent in spoken French;

On a vu ce film.

We've seen this movie.

Qui attendez-vous? On attend nos amis.

Who are you waiting for. We're waiting for our friends.

(54) Depreciative or ironical *vous*:

Eh, bien! On parle tous à la fois!

Well, now! You're all talking at once!

(55) Indeterminate *ils, elles*:

On nous demande trop!

They ask too much of us!

Lampach also points out that whereas *on* normally requires masculine singular agreement, "when it distinctly is used to refer to a woman the feminine form of an adjective used predicatively may be employed: speaking to a girl *alors on est contente? (tu es...?)*." No matter how the *nous ~ on* alternation is described a minimally adequate description must also describe all of these other alternations and roles of *on*.¹³

Even if Kayne's first argument does not convincingly refute

¹³The PS proposal would have to be reinforced by some very powerful arguments if it were to be a contender as a descriptive device to cover all of these alternations.

COPY, the second one does. He argues that a copying derivation of complex inversion does not account for the postverbal position of *ce* in sentence (56).

(56) a. Est-ce vrai?

Is it true?

b. Est-ce vraiment un homme intelligent, ton ami?

Is he really a smart man, your friend?

c. Est-ce vraiment aussi malin que ça, les enfants?

Are the kids really as clever as that?

d. Est-ce à Paris que tu habites?

Is it Paris you're living in?

Sentences like (38 a) "*Pourquoi cela est-il faux?*" and (39 a) "*Pourquoi ce que je dis te déplaît-il?*" show that *ce* is not produced as a copy of the subject NP even when the subject NP contains *ce* as one of its elements, as in *cela* and *ce que tu dis*. Kayne concludes that the obvious way out of this dilemma is to derive (56) from (57) by simple inversion (SUBJ-CL-INV).

(57) a. C'est vrai.

It's true.

b. C'est vraiment un homme intelligent, ton ami.

He is really a smart man, your friend.

c. C'est vraiment aussi malin que ça, les enfants.

The kids are that clever.

d. C'est à Paris que tu habites.

It's Paris you're living in.

If a copying rule is maintained there are then two distinct rules, COPY and SUBJ-CL-INV, each placing a clitic in the same postverbal position under the same environmental conditions. SUBJ-CL-INV is required for (56), "Est-ce vrai?", and copying would be required for sentences like 'Votre père part-il?' Kayne regards this as grounds for rejecting a copying analysis.

Langacker (1971) says that Kayne may be mistaken in treating *ce* differently from other clitics and that if *ce* is a clitic, then SUBJ-CL-INV would automatically account for the derivation of (56) from (57). He suggests that an appropriate convention might be that the copy of a clitic is the clitic itself. This proposed convention undercuts the force of Kayne's argument. However, as will be shown later (section 5.9) there is no need for such a convention in the grammar of French.

Kayne's third argument against COPY is that in complex inversions the copy of the subject NP is always a clitic:

(58) Pourquoi cet enfant pleure-t-il?

Why is this child crying?

*Pourquoi cet enfant pleure lui.

Kayne affirms (p.20) that COPY could easily place the copied pronoun as a separate node beside the verb rather than attach it to the verb. Since the Romance languages which do not have subject clitics do not have complex inversion Kayne believes that:

we might speculate that in any language exhibiting a complex inversion construction, the 'reduplicated' or 'inverted' pronoun will be a clitic.... If this is in fact a valid generalization, then it is one which is not explained under the copying hypothesis.

This last argument is based on speculation, and is impossible to assess without correlation of extensive data from a large number of languages. The argument is therefore interesting but indecisive.¹⁴ This indecisive state is accented when Kayne (1972:33) admits "...French, a language with subject clitics is the *only* (emphasis added GWP) Romance language to have a complex inversion construction."

A copying solution to complex inversion faces these problems:

1) Certain NP pronoun (clitic) combinations show that reduplication of the NP in preverbal position is not an appropriate means of derivation. 2) A pure inversion transformation is required for at least some clitics. 3) COPY would in effect duplicate the inversion process as well as introduce restrictions on pronominalization (i.e. only number, person and gender features are retained).

Two of Kayne's arguments, the *nous - on* alternation and the universal clitic hypothesis are weak. However, his demonstration that *ce* sometimes appears as *ce* (examples (48)-(49)) and sometimes as *il* (examples (38)-(39)) is convincing evidence that COPY is untenable. We are then led to accept one of two alternatives for collapsing complex inversion and SUBJ-CL-INV: 1) the transformational insertion of a (reduplicated) clitic in normal subject (preverbal) position, upon which SUBJ-CL-INV operates in the usual way; 2) the generation of clitics by phrase structure rules.

¹⁴Kayne (1971) argues that there is no pronominalization transformation in French. Such a transformation is crucial for a copying solution to complex inversion.

5.4 A transformational solution

Hirschbühler (1969) has proposed a version of the transformational solution. He suggested a four phase analysis to account for the original problem posed by (10).

(10) Où a-t-il mangé?

Where did he eat?

(11) Où Paul a-t-il mangé?

Where did Paul eat?

(12) Où a mangé Paul?

Where did Paul eat?

His phases are concisely summarized by Langacker (1971:17) as follows:

- (a) A pronoun subject is adjoined as the left-most element of the verb group.
- (b) A non-pronominal subject is reduplicated as a pronoun that is attached as the left-most element of the verb group.
- (c) A pronoun attached as the left-most element of the verb group is permuted with the first following verbal element (the auxiliary or main verb).
- (d) A non-pronominal subject is transported and attached to the right of the main verb.¹⁵

This analysis has the advantage over Langacker's (1965)

¹⁵Langacker says of this proposal "it was motivated mainly to avoid the order problem illustrated in [(10)-(12)], which I do not believe to be a real problem."

proposal in that it avoids the order problem inherent in (10)-(12). This is a significant problem because without the dichotomy permitted in (c) and (d) above, only an ad hoc adjustment can allow the separation of (10) from (12). Since (c) and (d) in Hirschbühler's analysis provide the same distinction as Kayne's STYL-INV and SUBJ-CL-INV, and since Kayne's analysis has the additional support of noninterrogative structures, we will follow Kayne's terminology here.

The motivation for (a) in Hirschbühler's scheme has to do with phonological phenomena associated with verb phrases. French has a rigidly controlled set of morphophonemic alternations usually characterized as elision and linking (or *liaison*). Elision is the dropping of prevocalic schwa as in (59).

(59) a. Elle préfère le français

/ɛl prefɛr lə frɑ̃sɛ/

She likes French best.

b. Il préfère l'anglais.

/il prefɛr lɑ̃glɛ/

He likes English best.

Linking refers to the appearance of consonants in prevocalic position that do not appear in preconsonantal position:

(60) a. Ils regardent le film.

/il rɔɡard lə film/

They watch the film.

b. Ils écoutent la radio.

/il zɛkut la radio/

They listen to the radio.

Linking does not occur between singular nouns and following verbs:¹⁶

(61) L'enfant aime sa mère.

/lãfã ɛm sa mɛr/

The child loves her mother.

If the subject clitics are attached to the verb phrase, then a convenient means of constraining linking to phrase internal elements is provided.

Hirschbühler's phase (b) provides a derivation of reduplicated sequences like those in (62):

(62) a. Jean, il est malade.

John, he is sick.

b. Ma femme, elle est enceinte.

My wife, she is pregnant.

c. Moi, je voudrais bien terminer cette thèse.

Me, I would very much like to finish this thesis.

It can be seen then, from this short presentation that Hirschbühler's analysis effectively accounts for all of the conditions required by Kayne and that there is no substantial distinction between the two.

Langacker (1971:47) makes an interesting suggestion that rather than having a clitic insertion or pronominalization rule, there might in fact be some value in deriving complex inversions through a

¹⁶Delattre has made several studies of the conditions under which optional violations of this principle occur. See Delattre (1966). He gives a summary in Delattre (1952).

process of copying, in *preverbal* position, an underlying postverbal subject. The problem with this suggestion is how to account for the variant subject positions in sentences like (10)-(12).

(10) Où a-t-il mangé?

Where did he eat?

(11) Où Paul a-t-il mangé?

Where did Paul eat?

(12) Où a mangé Paul?

Where did Paul eat?

Langacker's suggestion raises the problem of the source of subject clitics. Hirschbühler proposed two sources for the clitics: clitics which ultimately appeared in simple inversion derived from underlying pronouns and clitics in complex inversions derived from a COPY rule. Hirschbühler's COPY rule runs into the inevitable difficulty with NPs like *cela* because *cela* takes *ce* as its preverbal clitic partner but *il* as its postverbal equivalent. Some other alternative is needed.

5.5 Dislocation, reduplication and focus

This section examines an array of data relating to reduplication, especially of the type envisaged by Hirschbühler's COPY rule. The subject pronouns in sentences (63)-(65) reveal the alternation between the set of subject clitics and their corresponding strong forms.

(63) a. *Je l'ai vu.*

I saw him.

b. *Moi, je l'ai vu.*

I saw him.

c. *Je l'ai vu, moi.*

I saw him.

(64) a. *Tu chantes bien.*

You sing well.

b. *Toi, tu chantes bien.*

You sing well.

c. *Tu chantes bien, toi.*

You sing well.

(65) a. *Il promet d'envoyer un cadeau.*

He promises to send a present.

b. *Lui, il promet d'envoyer un cadeau.*

He promises to send a present.

c. *Il promet d'envoyer un cadeau, lui.*

He promises to send a present.

The subject clitics in usual declarative position are phonologically distinct from their dislocated equivalents:

(66) a. <u>clitic</u>	b. <u>dislocated</u>
je	moi
tu	toi
il/elle	lui/elle

The concept of strong versus weak forms is stated in functional terms in LeBidois and LeBidois (1968, I:129):

...la fonction de sujet a été réservée, nous l'avons dit, aux forms faibles, *je, tu, il* (pour le singulier), *ils* (pour le pluriel). Mais il arrive que ces formes,

étant inaccentuées, paraissent trop peu frappantes pour satisfaire l'esprit, pour le saisir avec force de la désignation de personne; aussi a-t-on recours aux formes fortes (*moi, toi, lui, eux*).

In a specific treatment of *lui* in subject position they say (p.143):

On comprend que le nominal ainsi employé convient particulièrement lorsqu'à l'aide du personnel on veut souligner une opposition.

In using the terms "forme forte", "force de la désignation" and "souligner une opposition" it is clear that LeBidois and LeBidois are referring to a focused element in surface structure. They reflect, essentially, instances of Sweet's statement about English (quoted by Chambers 1970:26):

The most general way of making a word prominent is by putting it before the others--if possible, at the beginning of the sentence....

There is a more general principle of position-emphasis--that of making a word more conspicuous by putting it in any abnormal--that is, unexpected, position.

In parallel fashion LeBidois and LeBidois state (II:59):

Au lieu de présenter la pensée sous une forme logique, chaque mot se trouvant à la place régulière que semblent lui imposer sa signification et sa fonction syntaxique, on la présente sous une forme disloquée voire désordonnée, avec des anticipations et des reprises où les "représentants" (personnels ou démonstratifs) jouent un rôle de première importance.

They call surface focus the "mise en relief" or "un mot ou groupe de mots qui est déjà dans l'esprit du locuteur." That is when the speaker intends to emphasize some concept, he has several syntactic possibilities open to him.

Dislocation is one such possibility. There are two kinds of dislocation. LeBidois and LeBidois call them "dislocation par anticipation" and "dislocation par reprise." The following discussion

will treat these as "dislocation" and "reduplication" respectively.

Dislocation of the subject appears in the following sentences:

- (67) *Ils ne sont pas morts ces obscurs enfants du hameau.*

These poor unknown children of the hamlet
are not dead.

- (68) *Ça ne me va pas la façon dont cet homme s'est
introduit chez moi.*

I don't think much of the way he wangled
his way into my house.

- (69) *Où était-il donc, ce Yann?*

This Yann, where on earth was he?

- (70) *C'est si orgueilleux, ces Corses.¹⁷*

Those Corsicans are so damned proud.

It is evident from these examples that dislocation refers to the appearance of the subject NP in postverbal position. A subject clitic represents the NP in the usual preverbal position. The following examples demonstrate dislocation of the object:

- (71) *Je la reconnais enfin, cette puissance, et je
demande seulement de ne pas la discuter.*

I have at last come to accept this power
and all I ask is that we no longer mention it.

¹⁷Example (70) is a construction in which it is possible for the indefinite (demonstrative) *ce* to be the pronominal equivalent of NPs such as *ces Corses* "those Corsicans". In this particular example the force of focus is supported by *ce*. The substitution of *ils sont* for *c'est* weakens the effective stress of the sentence.

- (72) Quand on *lui* demanda à *cette jeune fille* pure et simple....

When we asked this simple, naive girl....

- (73) Mais enfin, on *y* entre, à *l'Académie*, on *y* arrive....

But, after all, people do get admitted to the Academy; people do make it.

Parallel to the sentences with dislocated subjects, the last group of examples demonstrate that the object NP is represented by an object pronoun in the usual position, but that the object NP also occupies its normal postverbal position.

LeBidois and LeBidois (1968,II:61) contrast dislocated sentences with reduplicated sentences on the basis of 'affective stylistics'. They claim that dislocated sentences are primarily a stylistic device for representing focused elements while sentences with reduplicated elements are derived "soit afin de rendre l'expression plus claire ou plus vigoureuse, soit en vue de rattacher étroitement le terme en question à la phrase précédente."¹⁸

Reduplicated sentences are of the following types:

- (74) *Ses espadrilles*, on eut dit qu'*elles* ajoutaient au silence.

One would have said that his canvas shoes increased the silence.

- (75) *Un noble*, s'*il* vit chez lui dans sa province, *il* vit libre, mais sans appui.

¹⁸Both of these alternatives depend upon discourse contextual features in a very specific way.

A nobleman who lives in his home province
lives freely but without protection.

(76) Il faut que *le boeuf*, *il* devienne comme une éponge...

The beef has to become like a sponge...

(77) *Ces vieux*, *ça* n'a qu'une goutte de sang dans les
veines, et à la moindre émotion, elle leur saute au
visage.¹⁹

These old people have such thin blood and
at the least upset it rushes to their temples.

The focused subjects in these sentences are represented by subject clitics in the preverb position.²⁰ All of these examples show an intonation break between the fully specified NP and the following constituent. Langacker (1971:14) claims that some speakers permit sentences like (78) without the intonation break.

(78) Ton père *il* t'appelle.

Your father he's calling you.

Objects can also be reduplicated:

(79) Les grandes personnes peuvent parler tant qu'elles
veulent...*Les enfants*, on *les* fait taire.²¹

¹⁹As in (70) in certain styles and dialects *ça* is permitted as a pronominal form of human NPs.

²⁰LeBidois and LeBidois (1968,II,61) specifically state that some of these examples would no longer be permissible in standard-cultivated-French. Native speakers, however, accept such sentences readily.

²¹The contextual framework of this sentence makes a particularly striking example of the functionally contrastive value of reduplication.

Grown-ups can talk as much as they like...,

Children are obliged to be quiet.

- (80) *Les troupes qu'il commandait, on en faisait le sacrifice.*

The troops that he was commanding were the ones being sacrificed.

- (81) *Du moins, ce passé, ne me le reproche pas.*

At least don't hold my past against me.

In these examples the NP object precedes the VP constituent which contains a pronominal equivalent of the NP. Sentence (82) shows that both dislocation and reduplication can appear in the same sentence with respect to the same element.

- (82) *Oudin! il n'est pas nerveux non plus celui-là!*

Oudin! He's not any too nervous himself.

There are variants of these two basic processes for stressing certain elements. One forceful modification of reduplication is the appearance in sentence initial position of conjunctions like *et* "and" and *mais* "but".

- (83) *Et leur charrette qui est restée sous la grande porte!*

And their carriage that stayed in the entrance!

- (84) *Mais ce lambin d'Hivert qui n'arrive pas!*

But this Hivert that just doesn't want to come!

In these constructions the focused NP is represented by a relative pronoun in what appears to be a reduplication position.

A second modification to reduplication is the equivalent of English clefting as in sentences like (85)-(87).

(85) *C'est le curé qui va rire!*

It's the priest who's going to laugh.

(86) *C'est la distillerie qui entendit de singuliers offices!*

The distillery was witness to some strange carryings on!

(87) *A ta place c'est moi qui achèterais un joli bateau!*

If I were you I'd be the one to buy a nice boat.

LeBidois and LeBidois (1968,II:64) make a stylistic distinction between sentences (85)-(87) and (88).

(88) *C'est lui qui m'a ouvert la porte.*

He's the one who opened the door for me.

They claim that (88) is more usual than (85)-(86). In addition LeBidois and LeBidois (1968 I:118) say that the construction of sentence (89) "*dirige brusquement, violemment, la lumière.*"

(89) *C'est toi qui l'as nommé.*

It's you who named him. (i.e. You're the one who named him.)

(89) is virtually identical in form to (88) and is an example of clefted focus. The significant features of this construction are a focused NP followed by a relative pronoun representing it.

While (85) and (88) and (89) have the same superficial

syntactic structures, their affective values are different. The latter two, as already implied, focus the subject and supply new information. The former, on the other hand, stresses the fact that the priest will have a really good laugh. Although someone else might also have a good laugh, the priest will be the one who gets the most out of the joke. Furthermore, the whole sentence merely comments on something everybody (speaker and addressee) already knows. There is no new information introduced. Therefore, although the syntactic patterns of a set of sentences are identical, the individual interpretation attributed to a particular sentence is determined in part by the choice of lexical items.²²

In addition to the normal clefting represented in (85)-(87) there are sentences like the answers in (90) and (92).

(90) Q: Pourquoi criez-vous comme ça?

Why are you screaming that way?

A: C'est mon pauvre chien que j'ai perdu.

I lost my poor dog.

(91) Q: Ça ne va pas?

What's the matter?

A: C'est ma mère qui est morte.

I've lost my mother.

(92) Q: Qu'est-ce?

What's that?

²²This interaction between syntax and lexicon is an area requiring considerable work before it can be properly understood.

A: Une énorme grive qu'on apporte.

They're bringing an enormous thrush.

Although the specific discourse environment affects the interpretation given to the answers, it is clear through comparison with clefts like (83) that (90) and (92) are clefted. LeBidois and LeBidois (1968,II:64) say that *c'est* is implied in (92). If their statement is taken to mean that (92) and (93) are essentially paraphrases of each other, and since (93) is cleft then (92) is also a cleft sentence with the deletion of *c'est*.

(93) C'est une énorme grive qu'on apporte.

It's an enormous thrush they're bringing.

A third variant, dependent upon the combination of elements already inherent in the above sentences appears in (94).

(94) *Ce fantôme-là, ce fut lui que j'aperçus....*

That was the ghost that I saw

The clefting element *c'est...que* occurs as *ce fut lui que*. The *que* is the relative pronoun equivalent of *lui*. At the same time *lui* is the object pronoun equivalent of *ce fantôme-là*. The focused NP *ce fantôme-là* then has two reduplicated forms: *lui* and *que*. This sentence cannot have a form (95) parallel to (92) and (93).

(95) *C'est ce fantôme-là ce fut lui que j'aperçus.

A fourth variation of the reduplicated structure appears in (96) and (97).

(96) Jusqu'aux poules qui s'en mêlent!

Everybody's sticking their nose into it.

- (97) Jusqu'a mes [*autographes de*] Charles-Quint... qu'on
me conteste maintenant!

It's gone as far as my [*autographs of*]

Charles V that they are contesting now.

These sentences contain a prenominal *jusqu'à* and a postnominal relative clause. Similar to the sentences with *jusqu'à* are those like (98) and (99) with *pour* and *quant à* as topicalizers.

- (98) Pour les *après dinées*, je les livrais totalement à
mon humeur oisive et nonchalante.

As for the evenings, I used to let my idle
and carefree nature take them over.

- (99) Quant au *frère Gaucher*... il n'*en* fut plus question
dans le couvent.

As for Brother Gaucher... there was no more
mention of him in the convent.

Sentences (98) and (99) are distinguished from (96) and (97) in that they do not reduplicate as relatives. It is possible to have variants of (98) and (99) in which relatives do occur:

- (100) Quant à *mon père*, *qui est vieux*, *il* aime voyager.

As for my father, who is old, he likes to travel.

The relative in (100) is dominated by *quant à* and it is the whole sequence *mon père qui est vieux* which is reduplicated as *il*. Types (98) and (100) are then merely special instances of primary reduplication with an added focus phrase.

In summary, then the following declarative sentences

illustrate focus devices:

- (67) *Ils ne sont pas morts ces obscurs enfants* du hameau.
(dislocation of subject)
- (71) Je *la* reconnais enfin, *cette puissance*. (dislocation of object)
- (76) Il faut que *le boeuf*, *il* devienne... (reduplication of subject)
- (81) Du moins, *ce passé*, ne me *le* reproche pas. (reduplication of object)
- (83) Et leur charette, qui est restée sous la grande porte!
(*et* + reduplication)
- (85) C'est le *curé qui* va rire! (clefting)
- (92) Une énorme *grive qu'*on apporte. (clefting)
- (94) *Ce fantôme-là* ce fut *lui que* j'aperçus.... (reduplication and clefting)
- (96) Jusqu'*au* poules qui s'en mêlent! (*jusqu'à* + clefting)
- (98) Pour *les après-dînées*, je *les* livrais....
(*pour* + reduplication)

All of these sentences contain both fully specified NPs and a reduced copy of the NP. The reduced copy may be either a relative pronoun²³, a subject clitic or an object clitic. "Dislocation" and "reduplication" are distinguished by the positions of the full NP in

²³LeBidois and LeBidois (1968,I:273) prefer the term "conjonctif" to "relatif" because of the "force conjoignante, fortement unissante" of these words. The connection between this and Thompson's (1971) proposal for English might be fruitfully explored.

relation to its copy. A dislocated NP appears to the right and a reduplicated NP to the left of its copy. When the NP is to the left, relativization is possible. An NP to the right permits *only* dislocation.

A second general observation about focused sentences is that the pronominal copy always occurs in the same position it occupies in non-focused sentences.

The general data on focused elements are used, in the following section, as the basis for discussion of the underlying nature of such sentences, and ultimately of interrogatives showing complex inversion.

5.6 Focus, repeated elements and underlying structures

As outlined in section 5.4 Hirschbühler (1969) proposed that all complex inversions be derived via reduplication of an NP subject as a preverbal clitic. Kayne (1972, see section 5.3 above) has argued against such a solution. This section examines a proposal which is an elaboration of the Hirschbühler reduplication analysis. The elaboration consists of describing reduplicated sentences as deriving from two or more conjoined underlying sentences.

Focused pronouns occur in phrase final position. They also occur in their phonologically stressed forms in this syntactic environment. These two facts interrelate with other general properties of French stress. The final syllable of a word, phrase or sentence *may* be phonologically stressed (Fouché, 1959 introduction; Delattre,

1938). The occurrence of stressed *moi* alongside unstressed *je* in (63 b) is then merely a manifestation of general properties of French, since it contains at least two full phrases.

(63) b. *Moi, je l'ai vu.*

The information revealed in (101)-(104) suggests that (55 b) consists, in fact, of two sentences.

(101) a. *Votre père part.*

Your father is leaving.

b. *Il part.*

He is leaving.

(102) *Votre père, il part.*

Your father, he's leaving.

(103) *C'est votre père qui part.*

It's your father who's leaving.

(104) *C'est votre père. Il part.*

It's your father. He's leaving.

Each sentence in (104) is simple, and the pair could be paraphrased as (105).

(105) *C'est votre père. Votre père part.*

It's your father. Your father is leaving.

That is, if two NPs *votre père* are coreferential, it is possible to reduce (105) to (104) through pronominalization of the second NP.

It is also the case that (103) is closely linked to (105) in meaning. However, (103) contains a focused element not necessarily present in either (104) or (105). Sentence (103) also assumes (presupposes)

that the addressee is aware that 'someone' is leaving and the speaker is identifying the subject (by filling in specific information at the subject NP node.)

In a like fashion (102) and (105) share basic features of meaning. *Votre père* in (102) is focused but differs from (103) in that the second phrase (*il part*) contains information presumed not to be known to the addressee.

Each of the sentences in (101) can be paraphrased as the second member of (105). Sentence (101 b) presupposes that the referent of *il* is known (from the discourse environment), while (101 a) presents totally new information.

Out of this brief discussion derives the observation that whenever *votre père* appears as a full NP, it is introducing previously unknown information. Whenever a pronominal referent (*il*, *qui*) occurs, it is reiterating previously known information. This is of two types: a) the information (reference) inherent in *il*; b) the information contained in the verbal element of the relative clause. The relative pronoun *qui* serves to link the information (*votre père*) to the previously known verb *part*. The conclusion that can be drawn here is that sentences like (101), (102) and (63) do in fact contain two sentences in their underlying structures, summarized by sequences like (105). If this is the case and since (105) represents the most extensive form which can occur, let us assume that (105) is an abbreviation of the shared underlying structure of (101)-(104). Other separate features relating to focus and presuppositions are responsible for keeping the derived forms in (101)-(104) distinct.

These surface forms are derived via transformations which pronominalize, delete *c'est* and in the case of (101 a) delete *c'est votre père*.

Each of the above transformations is required independently in French. Reduction of the second member of a pair of repeated NP elements through pronominalization or relativization is attested in the following sequences.

- (106) a. Je vois votre mère. Votre mère achète une pomme.

I see your mother. Your mother is buying
an apple.

- b. Je vois votre mère. Elle achète une pomme.

I see your mother. She is buying an apple.

- c. Je vois votre mère, qui achète une pomme.

I see your mother, who is buying an apple.

The deletion of *c'est* from the topic sentence of (105) is motivated by sentences like (92).

- (92) Une énorme grive qu'on apporte.

The transformation which deletes the object NP of the topic sentence is exemplified in the following sentences.²⁴

- (107) a. Epouse qui t'aime.

Marry who loves you.

- b. Epouse celle qui t'aime.

Marry the one who loves you.

- c. Epouse cette femme. Cette femme t'aime.

²⁴All of the (a) sentences of these examples are taken from Bonnard (1961).

Marry that woman. That woman loves you.

- (108) a. Qui aime bien châtie bien.

He who loves well disciplines well.

- b. Celui qui aime bien châtie bien.

The one who loves well disciplines well.

- c. Une personne aime bien. Une personne châtie bien.

A person loves well. A person disciplines well.

- (109) a. J'aime qui m'aime.

I love (the one) who loves me.

- b. J'aime celle qui m'aime.

I love the one who loves me.

- c. J'aime cette femme. Cette femme m'aime.

I love this woman. This woman loves me.

- (110) a. C'est à quoi je pense.

That's what I'm thinking about.

- b. C'est à cela que je pense.

It's *that* that I'm thinking about.

- c. C'est cela. Je pense à cela.

It's *that*. I'm thinking about that.

All of the (a) sentences in these groups contain a relative pronoun without an overt antecedent. Possible paraphrases of the (a) sentences occur in (b) and (c). If (c) represents a possible underlying structure of (a), then relativization and topic-object-NP deletion are both required to derive (a).

Since all of the transformations required to derive (101) and (104) exist on independent grounds, it is reasonable to conclude that there is motivation for the suggested derivation.

5.7 Reduplication and complex inversion

If sentences like (102) "Votre père, il part." can be derived from (105) "C'est votre père. Votre père part." then the reduplication process inherent in the derivation will supply, at some point, an appropriate string such as (102) for complex inversion. If SUBJ-CL-INV applies to (102), (111) will result.

(111) Votre père part-il?

If your father leaving?

That is, one possible source of complex inversion is intermediate 'reduplicated' strings resulting from reduction of the second of a pair of identical NPs. However, Kayne (1972), as summarized in section 5.3 above, has argued against REDUP as the source of complex inversion on the grounds that NP - pronoun relationships would thereby be distorted and that two separate transformations would be required to place clitics in postverbal position.

There exists, then, a dilemma. The reduplication-focus proposal outlined above cannot account for the unusual pronouns in sentences like (37)-(45) which showed that *quelqu'un*, *cela*, *ce* + *S*, *que* + *S*, *rien*, *tout*, *ton meilleur ami*, and *assistance* were characterized by inadmissible reduplications but at the same time allowed complex inversion. Only (37) is reiterated here for the sake of convenience

and brevity.

- (37) a. *Quelqu'un, depuis quand m'attend-il?
 b. *Depuis quand m'attend-il, quelqu'un?
 c. Depuis quand quelqu'un m'attend-il?

A transformational analysis produces clitics via a transformation. The weakness with this proposal is that focused complex inversions like (112) are not distinct from unfocused complex inversions like (113).

(112) Marie, va-t-elle à l'école?

Mary, does she go to school?

(113) Marie va-t-elle à l'école?

Does Mary go to school?

Since (112) and (113) differ in meaning, the derivation ought to reflect the source of the focus in (112). Failure to do this is a violation of the Katz-Postal meaning preservation constraint. (see Chapter I, sec. 1.1)

In its strongest form the Katz-Postal constraint (KPC) would require that all possible elements of meaning be accounted for in the linguistic description of a sentence. Since focus is an element of meaning excluded from (112) and (113) by Hirschbühler's description, the description would thereby be inadequate.

At the same time the reduplication-focus derivation suffers from a weakness not pointed out by Kayne. The conditions of application for each of the transformations need to be stated so that the subtle meaning differences which exist are specified. The general conditions for application are those outlined above and are specified

in the discourse context and are frequently called the presuppositions. Since (see Chapter III) it is presently impracticable in general to supply the presuppositional or performative network relevant to a particular sentence, it is impracticable to do so in this case in particular. However, given the convention proposed in Chapter III that all presuppositional information required for particular derivations would be assumed to be present, it is possible to state that focused sentences may well be derived from a sequence of at least two juxtaposed underlying sentences. There is ample formal motivation for doing so. While such a source for (112) is possible, it is not for (113). The two sentences are therefore distinguished. The complex inversion of (112) can be derived via REDUP and subsequent SUBJ-CL-INV of *elle*. We are still left, however, with no source of *elle* in (113).

5.8 A PS solution

Kayne (1972) proposed that subject clitics (SCL) be generated directly into the base by the phrase structure (PS) rules. Subject NPs would branch to dominate NP and SCL as in (114).

- (114) NP → NP' - SCL
 NP' → Det - N - COMP

Number and gender of third person NPs would be reflected in the corresponding SCLs. NPs like *quelqu'un*, *cela*, *que + S*, *tout*, and *son meilleur ami* would take *il* as their corresponding SCL. The SUBJ-CL-INV transformation would operate upon these SCL in appropriate environments to yield

correct surface structures.

Since the PS rules of (114) are used for all sentences, two deletion transformations SUBJ-CL-DEL (subject clitic deletion) and STR-FRM-DEL (strong form deletion) are required to distinguish the syntactic configurations of (116), both of which derive from (115).

(115) lui + il est malin.

(116) a. Lui est malin.

He is smart.

b. Il est malin.

He's smart.

These two transformations interact in such a way that if one does not apply the other one does. STR-FRM-DEL does not apply in emphatic environments (e.g. (116 a)), in which case SUBJ-CL-DEL does. There are several problems which arise from this proposal. These are given in the following numbered sections:

1. The PS Proposal cannot provide an appropriate underlying structure for sentences like (117).

(117) a. Il fait beau.

It's nice weather.

b. Il grêle.

It's hailing.

There are never any subjects for (117) other than *il*, which cannot have an antecedent or any specific referent. The sequence *NP' + il* in the underlying structure of (117) is unmotivated.

2. The PS proposal implies that grammatical sequences like (118 a)

are derived from (118).

(118) *cela + il est faux.*

Because of (119 b) some special ad hoc restrictions are required to disallow application of STR-FRM-DEL.

(119) a. *Cela est faux.*

That is false.

b. **Il est faux.*

3. Most NP' - SCL sequences generated by the PS rules can appear in surface structure as focus devices (reduplications):

(120) a. *Lui, il est malin.*

Him, he's smart.

b. *Eux, ils sont partis.*

Them, they've gone.

c. *Marie, elle est belle.*

Mary, she's pretty.

This should argue against the mutually exclusive status of superficial, strong and weak forms. Kayne denies however, (p.23) that sentences like (120) derive from his PS rules because SCL can only appear in inversions or in the absence of subject NP. Since (120) contradicts this assertion of distribution it is difficult to assess how (120) relates to the PS proposal.

Since all those NPs (*quelqu'un, tout, cela*, etc.) which form an important part of the argument against COPY do not allow both subject NPs and SCLs in the same surface declarative sentence (as in 121) it is impossible to rationalize the distribution in (120) with the excluded (121).

(121) *Cela, il est faux.

If the PS proposal provides underlying structures for (120) it thereby implies that (121) should be grammatical. Since the alternations between *cela* and *il* implied in (118) do not exist (cf. 119), the structure in (118) cannot be correct. Clitic *il* in (122) cannot therefore come from the PS hypothesis.

(122) Cela est-il faux?

Is that false?

If, on the other hand, focused sequences like (120) are not derivable from underlying NP' - SCL strings, the role of emphasis (focus) in distinguishing between *lui est malin* and *il est malin* is unclear because it is precisely this focused alternation which provides the motivation for the dichotomous underlying subject. If such alternations are denied, then the PS proposal has no motivation. Sentences with nouns in the NP' slot do not undergo an emphasis alternation:

(123) a. Marie va à l'école.

Marie goes to school.

b. Elle va à l'école.

She goes to school.

The differences between these two sentences depend upon contextual information (presuppositions, discourse environment, and the like.) The PS proposal does not predict both the emphatic and the unstressed sets.

4. Although the PS proposal could conceivably account for the distributional properties of (120) if it were not for (121) and (122), it cannot account for those in (124).

(124) *Cela c'est faux.*

That is false.

Because of (122) "*cela est-il faux?*" Kayne believes that the NP' - SCL string is filled by *cela + il* for the NP *cela*. At the same time (124) shows that the declarative version (focused) combines *cela* and *ce*. Kayne derives *ce* as the clitic version of strong form *ça*. According to him *cela* and *ça* are unrelated.

The only conclusion to be drawn from 3. and 4. is that the PS proposal, although apparently capable of accounting for focus reduplication cannot in fact do so. The only motivation for the PS hypothesis comes from sentences with complex inversion which take *quelqu'un, tout, cela, personne, rien* in preverbal subject position. We return to this argument in the next section (5.9).

5. The final argument against the PS hypothesis relates to the derivation of subject clitic *ce*. Kayne derives it transformationally (via '*ce cliticization*') from strong form *ça*, before *être*. This conveniently accounts for the alternation in (125).

(125) *Ce sera Jean qui gagnera.*

It will be John who wins.

Ça pourra être Jean qui gagnera.

It could be John who wins.

When *ce* cliticization applies it leaves the NP' node empty. Two

important facts are accounted for in this way: *ce* does not co-occur with *il* in complex inversion (cf. 126) and *ce* never appears as the inverted element in complex inversion (cf. 127).

(126) a. *C'est-il faux?

b. *Ce ne serait-il pas faux?

(127) a. *Pourquoi cela est-ce faux?

b. *De quelle façon les enfants est-ce marrant?

However, the idiosyncratic behavior of *ce* cannot be sufficient justification for proposing the NP' - SCL structure for all subjects in French. If *ce* cliticization is a transformation which changes (128) to (129), then it could also be constructed so as to change (130) to (131).

(128) [_{NP} [_{NP'} CA] [_{SCL} X]] - être

(129) [_{NP} [_{NP'}] [_{SCL} ce]] - être

(130) CA + être

(131) ce + être

If the latter proposal is possible, and I see no arguments against it, then the unnecessary implications outlined in points 1. - 4. of this section do not arise. The PS proposal is therefore rejected.

5.9 Clitic conversion and 'subject' insertion

No single solution proposed so far (i.e. clitic formation, COPY, reduplication and PS) is a satisfactory source of complex inversion by itself. Langacker (1971:45) suggested that the problems

of NP - pronoun correspondance might be solved if a convention that "the clitic form of a clitic is the clitic itself" were adopted. He offers no arguments in support of the convention. It is a mildly attractive convention because it would circumvent the set of difficulties illustrated in (132) and (133).

(132) a. *Cela est vrai.*

That's true.

b. *Cela est-il vrai?*

Is that true?

(133) a. *C'est vrai.*

It's true.

b. *Est-ce vrai?*

Is it true?

The inverted form of demonstrative NP *cela* is *il* in (132) but *ce* for demonstrative clitic *ce* in (133). Langacker proposes the conversion in an attempt to salvage a reduplication origin of complex inversion. If it is to be salvaged, some additional convention will have to be invoked which states that all third person non-feminine singular NPs take *il* as their inverted clitic forms (as in (132)).²⁵ Kayne foresaw this possibility and suggested that the *il* in (132) might be related to *il* in the expressions of (134).

²⁵The 'non-feminine' designation is required to prevent *il* from being an inverted clitic referring to *Marie* in:

(A) **Marie, va-t-il à l'école?*

This *might* indicate that masculine is the unmarked gender in French.

(134) a. Il fait beau.

It's nice weather.

b. Il semble que....

It seems that....

c. Il faut que....

It's necessary that....

d. Il y a Jean qui veut te poser²⁶

There is John who wants to ask you

The *il* in both (132) and (134) share the common feature of being partially empty morphological units. In the former, *il* occupies the normal postverbal position of inverted clitics. Since it is in subject position and since *cela* is the logical subject of the sentence, *il* is interpreted as a copy of the antecedent *cela*. This interpretation is an interpretation of surface structure only.

²⁶It should be noted however, that there is a dichotomy between (134 a) and (134 b). The latter could simply be the result of extra-positioning the clause introduced by *que* from a position in the NP node to the right and leaving the residual *il*. Such a derivation of *il* is not possible for (134 a), although *il* presumably derives directly from an underlying N node in both cases. At the same time, however, *il* in (134 a) and (134 b) is distinct from the *il* of (132).

LeBidois and LeBidois (1968,II:177) make the distinction between the two types of *il* as follows: "[la langue française] use du représentant personnel devant les verbes de la façon ordinaire, *il est*, *il aime*, *il meurt*; elle se sert du nominal dans ces phrases d'une nature particulière où le verbe est soit unipersonnel, *il pleut*, *il faut*, *il appert*, soit pris impersonnellement, *il est des lieux*, *il y a des occasions où*, *il me souvient que*, *il suffit que*, *il sied que*, etc. Ces phrases sont dites impersonnelles."

While their second dichotomy seems to be appropriate the difference between *il aime* and *il pleut* does not reside in the nominal (NP) status of *il* in the latter. The subject *il* of *il pleut* behaves in all instances like a clitic and is therefore a clitic, whatever its referent(s) may be.

Similarly in (134) *il* occupies the subject position but since no fully specified NP is possible (cf. 135), *il* cannot have an antecedent either overtly or contextually.

(135) a. *Les nuages pleuvent.

b. *Le ciel pleut.

Because there can be no antecedent in (135) *il* has no specific semantic referent and is traditionally called the impersonal pronoun (and its function the impersonal subject). It is only the fact that *il* in (132) has a possible antecedent which distinguishes it from the *il* of (134 a). Since the distinction arises from the co-occurrence restrictions on verbs like *pleuvoir* "to rain" rather than from any character inherent in the *il*, it can be concluded that *il* in (132 b) is as equally empty as *il* of (134).

Kayne used the sentences of (40) to argue against a reduplication origin of complex inversion.

(40) a. *Que Jacques ait dit cela* ne vous intéresse-t-il pas?

Doesn't it interest you that Jack said that?

b. **Que Jacques ait dit cela* ne vous intéresse sûrement pas et *il* ne m'intéresse pas, moi non plus.

c. *Que Jacques ait dit cela* ne vous intéresse sûrement pas et *cela* ne m'intéresse pas moi non plus.

That Jack said that certainly doesn't interest you and that doesn't interest me either.

d. **Que Jacques ait dit cela* ne vous intéresse-ce pas?

Sentence (40 a) is parallel to (124 b) and the *il* has the same subject filling role. In the affirmative (40 c) this subject role is designated by *cela*, a fully specified NP with demonstrative value. The object of the demonstrative sense is the sentence initial nominalization. Since the subject position is occupied by an NP it is not possible to claim that the slot is morphologically empty. That this is so is illustrated by the sentences in (136), each of which is a possible paraphrase of (40 c).

(136) Que Jacques ait dit cela ne vous intéresse sûrement pas et

$\left\{ \begin{array}{l} \text{a) cet évènement} \\ \text{b) ce fait} \\ \text{c) cette histoire} \end{array} \right\}$	$\left. \begin{array}{l} \\ \\ \end{array} \right\} \begin{array}{l} \text{ne m'intéresse pas} \\ \text{moi non plus} \end{array}$
--	--

Only NPs with demonstrative determiners can occur in the variable slot of (136):

(137) *Que Jacques ait dit cela ne vous intéresse sûrement pas et

$\left\{ \begin{array}{l} \text{a) un évènement pareil} \\ \text{b) un tel fait} \\ \text{c) une si grande nouvelle} \end{array} \right\}$	$\left. \begin{array}{l} \\ \\ \end{array} \right\} \begin{array}{l} \text{ne m'intéresse pas} \\ \text{moi non plus}^{27} \end{array}$
--	---

This fact is undoubtedly related to the restrictions on (40 c). That is, the contrast between (136) and (137) is reflected directly in (40 c) by the fact that only *cela* and *ceci* are possible

²⁷All of the sentences in (137) are grammatical as separate sentences unrelated to (40 c). They are not possible paraphrases of (40 c).

nominals in such structures. Both of these are demonstratives.

The problem then revolves around the nature of *il* in (40 a). That is, *il* and *cela* are distinct but *il* appears to be the inverted version of *cela*.

This conclusion forces a re-evaluation of the notion of the *il* convention outlined as an appendix to Langacker's clitic-clitic convention. Since *il* appears in constructions in which its only function is to designate the subject position, this fact ought to be stated as a rule with the following integration into the regular rule scheme.

Inversion of an NP which is unmarked for gender converts that NP into *il*. This rule is compatible with Langacker's clitic-clitic rule. The conversion implies two processes: *il* formation and inversion. Since *il* formation is required only for postverbal elements, it is reasonable to assume that it applies logically after inversion. If this is the case, it may be possible to rescue the REDUP (reduplication) source of complex inversion.

All of the difficulties with a COPY arise from examples in which the noun of the NP is not specified overtly in the surface structure. Sentence (40) is such an example, so are those sentences with *quelqu'un*, *rien*, *personne*, *tout*, and *ton meilleur ami*. Each of these terms refers to a general category of objects and whatever specific nominal element may be understood as an instantiation of the category is not specified. Inverted versions of such terms are *il*: these inversions contain the empty subject marker *il* and it is precisely the appearance of the subject marker in postverbal position

which marks the sentence as an interrogative. As such the *il* is virtually an interrogative particle.

Given an inversion rule and two related rules which preserve clitics and convert nonspecific NPs into *il* postverbally (clitic conversion), the pairs in (138) and (139) lead the way to a solution to the complex inversion problem.

(138) a. *Cela, il est vrai. (putative focus)

b. Cela, c'est vrai. (focused)

That is true.

(139) a. Cela est-il vrai? (unfocused)

Is that true?

b. Cela, est-ce vrai? (focused)

Is that true?

In (138) it is seen that *il* cannot be the reduplicated version of a focused demonstrative, only *ce* can serve in this capacity. However, (139 a) shows that *il* does function as the subject slot marker when no focus is present. There are then *two* tentative sources of complex inversion: a) clitic conversion, as in (139 a); and, b) reduplication plus inversion, as in (139 b).

Clitic conversion occurs in highly restricted environments namely when there is a *Q* morpheme present and the subject NP is a noun. The surface results of the clitic conversion transformations are always complex inversions.

The product of clitic conversion is always postverbal *il*. This *il* is morphologically empty. In lieu of any other subject

marker in this position, it serves to mark the construction as an interrogative. Given these three observations it is reasonable to assume that the phonological sequence *iʔ* could be inserted transformationally without reference to clitic-clitic rules, clitic conversion or any other conversion or permutation processes. The insertion of *iʔ* in postverbal subject position would not modify the underlying meaning in any way. The *Q* morpheme and an unspecified unreduplicated preverbal subject NP would be the trigger for postverbal (subject) *iʔ* insertion (*iʔ* INSERT). Clitic conversion can therefore be replaced by *iʔ* INSERT as the partner of reduplication and SUBJ-CL-INV as sources of complex inversions.

Langacker (1965) and Hirschbühler (1969) both proposed that copying or reduplication was involved in the derivation of complex inversions. Langacker's (1965) proposal is inadequate because it cannot distinguish between the positions of inverted clitics and inverted NPs in complex inversions. Hirschbühler's proposal attempted to avoid this problem by producing reduplicated preverbal clitics for all complex inversions. Kayne (1972) has shown that not all complex inversions can derive from reduplications because of alternations between the preverbal and the postverbal clitics corresponding to certain NPs. However, since reduplication is necessary as a focus device in French and since there are focused complex inversions, reduplication is required for at least some complex inversions.

Kayne proposed that complex inversions all be treated as

deriving from underlying bipartite subject NPs (NP' - SCL). This PS proposal is untenable because it makes incorrect predictions about alternating forms (cf. (118), (120), (122), (125)) and because it does not properly motivate treatment of *ca* - *ce* alternations as being manifestations of NP' - SCL structures. Kayne's PS proposal takes advantage of the Free Ride Principle (Zwicky, 1970)²⁸ by generating clitics preverbally. This principle is a "methodological rule of thumb" which is used when deciding between two or more alternatives which produce the same derived structures. If one of the alternatives increases the domain of an independently motivated transformation, then that solution is selected from among the contenders. The output of such a rule gets a free ride on the second. The free ride in this instance occurs when SUBJ-CL-INV applies. Since the result of clitic insertion is always the post-verbal phonological unit *iʔ* and since this unit is only a marker of subject position and not a clitic in the usual sense, the use of the Free Ride Principle is unnecessary. Since it is unnecessary, any proposed generalization captured through its use is a spurious one.

5.10 Conclusion

The statement of complex inversion ought to be as follows.

SUBJ-CL-INV applies to reduplicated (focused) clitics. There is no

²⁸Gary Prideaux brought Zwicky's article to my attention. For outstanding examples of the principle at work in phonology, see J. Harris' and S. Schane's articles in Casagrande and Saciuk (1972). For criticism of the principle in phonology see Creore (forthcoming).

change in the phonological structure of clitics which undergo this transformation. Unreduplicated NPs in the environment of a *Q* provide the trigger for *il* INSERT: the *il* is inserted directly into its superficial postverbal position. This diverse origin of complex inversions reflects the different natures of *il* in (140) and (141).

(140) a. Il pleut.

It's raining.

b. Cela est-il vrai?

Is that true? (unfocused)

(141) a. Jean, il voit le chien.

John, he sees the dog. (focused)

b. Pierre vient-il?

Is Peter coming? (unfocused)

One further refinement is required, however. Examples like (142) are easily derivable via REDUP and SUBJ-CL-INV.

(142) Marie, chante-t-elle bien?

Does Mary sing well? (focused)

On the other hand it is not possible to derive (143) in this scheme.

(143) Les filles vont-elles bien?

Are the girls doing well? (unfocused)

Therefore there must be some means of retaining gender and number of NPs in pronominal equivalents of nonfocused complex inversion constructions, a problem left unanswered at the end of section 5.7 above.

As was the case with the morphologically empty *il* discussed

above in section 5.9 the clitics in (144) are unvarying except inasmuch as they repeat gender and number features of NPs.

(144) a. Le garçon prend-il trois oranges?

Does the boy take three oranges?

b. Les spermophiles mangent-ils de l'herbe?

Do ground squirrels eat grass?

c. Alicia et Vanina sont-elles charmantes?

Are Alicia and Vanina charming?

d. Michèle est-elle partie?

Is Michèle gone?

This type of interrogative parallels those derived by *iʔ* INSERT in never having a postverbal noun. Unfocused complex inversions of this type parallel those derived by *iʔ* INSERT in that there are never any alternations between a postverbal NP and the postverbal clitics:

(145) *Les suisses sont les suisses drôles?

Are the chipmunks funny?

There is therefore no motivation to posit a COPY source for the clitics. Since there are also no unfocused preverbal reduplications possible (cf. 146), there is no reason to posit a REDUP derivation for the clitics.

(146) *Les suisses ils sont drôles. (unfocused)

Chipmunks are funny.

Furthermore the only clitics which can appear in unfocused complex inversions are in third person:

(147) a. *Lui et toi chantez-vous bien?

Do he and you sing well?

b. *Toi et moi partons-nous demain?

Are you and I leaving tomorrow?

c. *Je suis-je fatigué?

Am I tired?

d. *Tu vas-tu à l'école?

Do you (fam.) go to school?

A fourth similarity to *iʔ* produced by *iʔ* INSERT is the lack of meaning change associated with the presence of the clitic in (143) and (144). The surface function of the clitic is to mark the sentence as an interrogative. As such it is a reflection of an underlying Q and does not have independent semantic value.

The only features which distinguish the clitic of (143) from *iʔ* insertions are the presence of gender and number. As formulated to this point *iʔ* INSERT applied only in sentences in which the subject NP is unmarked for gender and number. A slight modification to the effect that other third person clitics (*viz. ils, elle/elles*)²⁹ are inserted when the subject NP is marked for gender and/or number will demonstrate the central unity of nonfocused complex inversions. This modified *iʔ* insertion could then be called 'subject' insertion (SUBJ-INSERT) because it inserts clitics in postverbal subject position.

There are therefore two sources for complex

²⁹It should be noted here that while number appears in the orthography it is never manifested in oral standard French in this position: postverbal clitics are not subject to phonological linking with following vocalic elements.

inversions³⁰.

- a) REDUP plus SUBJ-CL-INV
- b) SUBJ-INSERT

This solution to the complex inversion problems has the additional advantage of avoiding a pronominalization transformation. Kayne (1971) argues that French does not have such a transformation. Neither SUBJ-CL-INV nor SUBJ-INSERT require pronominalization. The former operates upon structures required independently and the latter merely attaches a phonological unit to the right of the finite verb.

³⁰This observation accords very nicely with some native speakers' judgements that unfocused complex inversions are simple interrogatives while focused complex inversions are emphasis devices.

CHAPTER VI

FRENCH INTERROGATIVES: *EST-CE QUE* AND *WH* QUESTIONS

	<u>Page</u>
6.0 Introduction	243
6.1 <i>Est-ce que</i> as an inversion	243
6.2 <i>Est-ce que</i> as a morpheme	247
6.3 <i>WH</i> questions (<i>WHQ</i>)	250
6.4 <i>WHQ</i> and intonation	251
6.5 <i>WHQ</i> and inversion	254
6.6 <i>WHQ</i> and <i>est-ce que</i>	255
6.7 <i>Quel</i> questions	261
6.8 Conclusion	265

FRENCH INTERROGATIVES: *EST-CE QUE* and *WH* QUESTIONS6.0 Introduction

The third main type of YNQ in French are the so-called *est-ce que* questions. These questions contain a sentence initial *est-ce que* sequence which has the phonological shape /ɛsk(ə)/.

Examples are:

- (1) a. Elles sont venues.

They (fem.) came.

- b. Est-ce qu'elles sont venues?

Did they come?

- (2) a. Votre père part.

Your father is leaving.

- b. Est-ce que votre père part?

Is your father leaving?

- (3) a. Les soldats ont tué treize femmes et leurs
enfants.

The soldiers killed thirteen women and
their children.

- b. Est-ce que les soldats ont tué treize femmes et
leurs enfants?

Did the soldiers kill thirteen women and
their children?

6.1 *Est-ce que* as an inversion

Traditional analyses have regarded the preposed *est-ce que* as a unit. Langacker (1965:595) argued that this approach "is

almost certainly wrong" because it does not capture generalizations which might be made about distributional properties of certain elements in French. One could argue that negative particles and adverbs can occur "inside" *est-ce que*. Sentences (4)-(9) are examples of these properties.

(4) N'est-ce pas que Jean vient?

Isn't John coming?

(5) Est- $\begin{Bmatrix} \text{ce} \\ \text{il} \end{Bmatrix}$ probable que Jean viendra?¹

Is it likely that John comes?

(6) Est-ce ainsi que votre père travaille?

Does your father work in that way?

(7) *N'est pas ce que Jean vient?

(8) *Est- $\begin{Bmatrix} \text{ce} \\ \text{il} \end{Bmatrix}$ que possible Jean vient?

(9) *Ainsi est-ce que votre père travaille?

The ungrammatical sentences in this series show that the intervening elements are not randomly permutable to any segment boundary.²

¹Sentence (5) cannot occur with *ce* in standard (literary) French although it does occur in some styles. There is a systematic alternation between *ce* + *est* and *il* + *est* when followed by an adjective plus complement.

(A) a) C'est vrai

It's (that is) true.

b) Il est vrai que Paul partira demain.

It's true that Paul will leave tomorrow.

(B) a) C'est possible.

It's (that's) possible.

b) Il est possible que vous la connaissiez.

It's possible that you know her.

²The surface phonological shape of *est-ce que* is ['ɛsk(ə)]. At this point in the argument the status of the elements has not been determined so the term 'segment' seems adequate. The discussion below bears upon the internal structure of the segment.

Negative sentences are formed by the attachment of the paired particles *ne* and *pas*. In negative declaratives these particles appear before and after the verb, respectively, as in sentence (10), or surrounding the auxiliary as in (11).

(10) Jean *ne* vient *pas*.

John doesn't come.

(11) Jean *n'est pas* venu.³

John didn't come.

(12) *Ne* vient-il *pas*?

Isn't he coming?

(13) *N'est-il pas* venu.

Didn't he come?

The adjective in (5) and the adverb in (6) are similarly constrained. In declaratives they appear postverbally, and in interrogatives they follow the inverted pronoun, as in:

(14) Il est possible que vous ayez raison.

It is possible that you may be right.

(15) Est-il possible que vous ayez raison?

Might you be right?

One final set of correspondances bears upon the analysis of *est-ce que* and is the one Langacker (1965) stresses. Declarative sentences can occur with the preposed structure *c'est que*. This 'phrase' has the literal translation *it is that*. This English

³The *ne* [nə] occurs as *n'* [n] prevocally, and the reduction in (11) and (13) is not a direct function of the relationship between *ne* and the auxiliary. It is a phonological phenomenon, not a syntactic one.

phrase is a cleft introducer which serves as a focusing device.⁴

C'est que serves an identical function in French and takes surface sentential complements.⁵

(16) *C'est que votre père part.*

It's that your father is leaving.

(17) *C'est que Jean vient.*

It's that John is coming.

It has been argued (Langacker 1965, 1971; Valdman, 1967) that this clefting device is the source of *est-ce que*. The fundamental similarity of the phonological sequences /sɛk(ə)/ and /ɛsk(ə)/ supports this position. The different ordering of the individual phonological elements can be attributed to an inversion process which is required on independent grounds. Furthermore the behavior of negative particles, adjectives and adverbs is identical for both *c'est que* and *est-ce que*:

(18) a. *Ce n'est pas que Jean vient.*

⁴For a recent analysis of cleft sentences in English see Akmajian (1970). For a comprehensive survey of proposals see UESP (1969).

⁵It should be noted here that the structure in question shows many parallels to the clefted reduplications of the type (C) discussed in section 5.5.

(C) *C'est Jean qui vient.*

In the clefted sentences it is the NP which is the focused element whereas in (16) and (17) it is the entire sentential complement which is focused. Apart from the complementizer *que* the two types of sentences then have the identical function of focusing a surface NP which follows *c'est*.

The cleft introducer can have emphatic or causal value. The value it has in a particular instance is not relevant here, for detail see LeBidois and LeBidois (1968:passim). Langacker (1971) attempts to exploit the distinction but it is evident from the discussion below that it is an unnecessary distinction in relation to *est-ce que*.

It's not that John is coming.

b. *Ne c'est pas que Jean vient.

(19) a. $\left\{ \begin{smallmatrix} \text{I1} \\ \text{C'} \end{smallmatrix} \right\}$ est probable que Jean viendra.

It's probable that John will come.

b. $\left\{ \begin{smallmatrix} \text{*I1} \\ \text{C'} \end{smallmatrix} \right\}$ est que probable Jean viendra.

(20) a. C'est ainsi que votre père travaille.

This is the way your father works.

b. Ainsi est-ce que votre père travaille.

Thus it is that your father works.

c. *Ainsi est-ce que votre père travaille?⁶

C'est que therefore appears to supply a source for *est-ce que*.

6.2 Est-ce que as a morpheme

However, the 'cleft-focus' meaning of *c'est que* is never retained in *est-ce que*. Furthermore I have been unable to find a native speaker of French who is willing to accept that the two sequences are in any way connected. The more sophisticated will believe that there may be a historical connection but steadfastly refuse to believe that there might be a synchronic relationship between the two. Roulet (1969:150) expresses the same view.

Terry (1970) argues that *est-ce que* has an "affective

⁶The distinction between (20b) and (20c) resides in the fact that certain sentence initial adverbs, (the most common are *ainsi* "thus", *en vain* "vainly", *à peine* "scarcely", *peut-être* "maybe", and *toujours* "nevertheless") require inversion of the following subject and verb. Nevertheless (20c) cannot occur as an interrogative, as attested in (9). For extensive detail of the inversion in the environment of adverbs see LeBidois and LeBidois (1968 II:Chapter 2).

intensity" which is greater than other interrogative types.

Grundstrom (1971:156) disagrees. If Terry were correct, it might be possible to defend a cleft origin of *est-ce que* but his interpretation of the intensity is not well defended and is open to question.⁷

The cleft - focus value of *c'est que* is retained in those examples with *est-ce que* which accept negative particles and adverbs. That is, sentences like "N'est-ce pas que Jean vient?" are in fact the inverted (i.e. interrogative) equivalents of cleft sentences like (18 a). It is therefore reasonable to assume that they share some elements of underlying structure. On the other hand (22) cannot be derived from (21) because it is only in the clause *il fait beau aujourd'hui* that the two sentences are similar and the sequences *c'est que* and *est-ce que* in spite of their similarities, are unrelated in meaning.

(21) C'est qu'il fait beau aujourd'hui.

It's that the weather is nice today.

(22) Est-ce qu'il fait beau aujourd'hui?

Is the weather nice today?

Additional evidence to support the dichotomy resides in the fact that the cleft introducer shows tense alternations while the

⁷Grundstrom says:

My own observations indicate that *est-ce que* is frequently used when the utterance is long or complicated, when the speaker is hesitant, or when he begins a question before he has formulated it in his mind. This seems to be the opposite of interrogative intensity, but perhaps these several uses of *est-ce que* are not mutually exclusive.

If the uses are not mutually exclusive, then at least the underlying representation of the several uses are distinct.

interrogative *est-ce que* does not:

(23) a. C'était que Jean viendrait.

It was that John would be coming.

b. Etait-ce que Jean venait?

Was it that John was coming

c. Ce n'était pas que Jean était venu.

It wasn't that John had come.

The sentences of (23) are grammatical only as clefts and (23 b) would be ungrammatical as a simple interrogative.

There are no occurrences of *est-ce que* which do not have the phonological sequence /ɛsk(ə)/. That is, there are no 'uninverted' forms, no tense inflections, no forms with inserted elements: *est-ce que* exists as an unvarying phonological sequence indicating that the sentence to which it is prefixed is a question.

Langacker's proposal is therefore mistaken and his statement (1971:40) reveals an unnecessarily rigid view of the value of contemporary linguistic methods:

Since I have already stretched your credence to the breaking point, if not far beyond, I may as well follow my instincts to their logical conclusion and close with the following non-answer: if *c'est que* did not exist, linguists would have to invent it.

Huddleston and Uren (1969:12) raise the objection to Langacker's analysis that *c'est que* does not occur frequently enough to constitute the source of *est-ce que*. Langacker (1971) counters this argument by stating that "it remains to be shown that frequency of use has any bearing on the appropriateness of derivations." He counters the argument that native speakers do not judge *est-ce que* to be related to *c'est que* by stating that such arguments need not necessarily "be expected to be subject to introspection." Both of

these counter arguments receive acceptance in generative literature (Chomsky 1965:Chapter 1) but if the counter claims are open to doubt because they are outside the realm of empirical investigation, so are the original claims.

Langacker admits (1971:38) that "*est-ce que* questions have been idiomatized" and asserts (1971:39) "but there are grounds for believing that this has not happened in the standard language" without providing any grounds for the assertion other than restating the negative particle insertion argument which applies only to clefts in any case. The implication of Langacker's position is that idioms ought to be derivable from underlying syntactic structures and that whatever fixing of form or alteration of meaning occurs is a relatively superficial process.⁸ If this is so then there are surface semantic changes. Such changes would violate the Katz-Postal constraint and are therefore not permitted.

The only solution to the *est-ce que* fiasco is to accept the fact that *est-ce que* is inserted directly in pre-sentence position as an independent morpheme associated with an underlying *Q*. This interrogative morpheme serves as a marker of interrogation. As such it interacts with other interrogative morphemes (*WH* words).

6.3 *WH* questions

At first glance *WH* questions (*WHQ*) in French are relatively

⁸Langacker does, however, say that the nature of syntactic idioms is open to question. Fraser (1970b) provides an analysis of different types of idioms according to the degree to which they can undergo transformation.

It should also be noted that Langacker (1966:75-76) presents an analysis in which *est-ce que* is derived by a series of independently motivated transformations. However, the problems of meaning change remain.

uncomplicated. They take the three basic YNQ patterns as their starting point and mark one or more constituents for special notice. The specially designated constituent is the one which appears as the *WH* word in surface structure.

There are, however, problems relating to the generative interpretation of idiosyncratic distributional factors differentiating questioned human and non-human constituents. For example, (24) is grammatical while (25) is not.

(24) Qui passe?

Who's going by?

(25) *Que passe?

What's going by?

This pair contrasts with (26) and (27).

(26) *Qui voit Henri?

Who does Henry see?

(27) Que voit Henri?

What does Henry see?

No satisfactory answers based on independently motivated rules, constraints and external alternations to this distributional problem have as yet been suggested.

6.4 WHQ and intonation

The structurally simplest type of WHQ is that represented by sentences like (28)-(31).

(28) Il part quand?

When is he leaving?

(29) Il va où?

Where is he going?

(30) Tu vois qui?

Who do you see?

(31) Vous achetez quoi?

What are you buying?

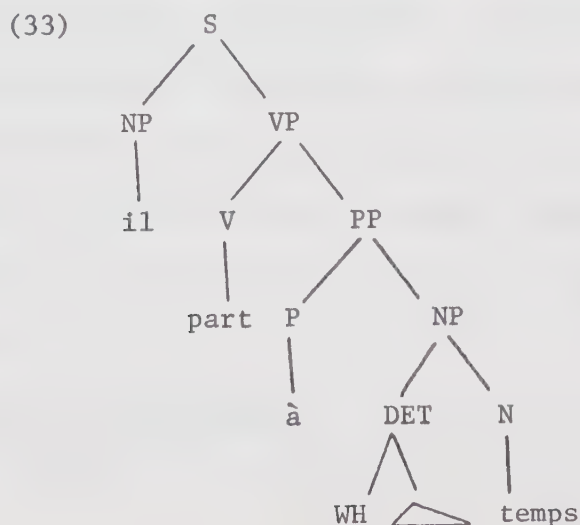
These sentences can have either rising or falling intonation. With rising intonation they suggest presuppositions of incredulity and are variations of echo questions like (32) with high rising pitch on the final segment.

(32) Vous achetez des cigares?

Are you buying (some) cigars?

On the other hand, with falling pitch on the final segment these questions merely question the nature of the object, location, or time, as the case may be. The various interrogative words like *quand* and *où* are superficial representations (i.e. lexical signals) of questioned temporals, locatives and the like.

The underlying structure of sentence (28) is (33).



Since *heure* is a temporal noun, the entire prepositional phrase in which it occurs is a temporal adverb specifying the time at which the verbal action takes place. If the determiner is an unknown quantity and if the speaker wants to replace this indeterminacy by some specific point of reference he can ask a question about it. The lexical item which derives from an unspecified and questioned temporal is *quand*.

The underlying *WH* morpheme attached to the determiner serves the function of relating the semantic *Q* to the node directly dominating DET in (33). As a notational device it is ad hoc but its function is a reflection of the underlying semantic disequilibrium. The *WH* can, as discussed in more detail in section 6.7 below, be attached to either the determiner node or to the NP node dominating both *DET* and *temps* in (33). The difference between the two attachments is apparent in pairs like (28) and (34).

(28) Il part quand?

He leaves when?

(34) Il part à quelle heure?

He leaves at what time (o'clock)?

In (34) the use of *heure* "hour" reveals that the presuppositions connected with the time of departure are more precise than they are in (28) and that in (34) only the nature of the determiner system is under question. In (28) the whole temporal phrase is being questioned. The distinction is emphasized in the types of usual answers to these two questions.

(28) Il part quand?

A1) Il part dans trois minutes.

He leaves in three minutes.

A2) Il part demain.

He leaves tomorrow.

A3) Il part lundi prochain à huit heures du matin.

He leaves next Monday at 8:00 a.m.

(34) Il part à quelle heure?

A1) Il part à trois heures vingt.

He leaves at twenty after three.

A2) Il part à midi.

He leaves at noon.

A3) Il part à minuit.

He leaves at midnight.

In the latter set there is reference to a specific time as represented in the calibrations of clocks (or some such device) while the former sets can contain references to broader categories of time. That is, when the determiner is a *WH* word, the answer provides more specific information about the temporal slot than when the whole temporal phrase is glossed as a *WH* word. Consequently the answers to (34) are also possible answers to (28) but the answers to (28) are not usually possible responses to (34).

6.5 WHQ and inversion

Sentences like (28) have alternate forms⁹ with the *WH* word

⁹For discussion of some of the contextual and stylistic differences between the variants see Terry (1970), Foulet (1921) and Fromaigeat (1938).

in sentence initial position, as in (35).

(35) Quand part-il?

When is he leaving?

These sentences are, then, derived by two additional transformations: one which moves the *WH* constituent to sentence (clause) initial position, and one which inverts the subject and verb. When there is a preposition in the phrase containing the *WH* morpheme the preposition is moved with it. This condition is responsible for the distinction between the following pairs.

(36) a. *Quelle heure part-il à?

b. A quelle heure part-il?

(37) a. *Quoi faites-vous cela pour?

b. Pourquoi faites-vous cela?

6.6 WHQ and *est-ce que*

As YNQ can use *est-ce que* rather than inversion, so can WHQ:

(38) Quand *est-ce qu'*il part?

(39) A quelle heure *est-ce qu'*il part?

The transformations required to derive these are straightforward: *est-ce que* insertion and *WH* movement. However, it is in extending this scheme that difficulties are encountered. The only WHQ discussed to this point are those questioning elements in the adverbial (complement) constituents. When the object and subject NPs are questioned, certain sequences which ought to be grammatical given

usual notions of generality and analogy, are in fact not permitted.

Interrogative words questioning objects appear in two forms, *qui* and *que*, depending on the human--nonhuman status of the (presupposed) object.

(40) a. Jacques voit Marie.

Jack sees Mary.

b. Jacques voit qui?

Who does Jack see?

c. *Qui voit Jacques?¹⁰

d. Qui Jacques voit-il?

Who does Jack see?

(41) a. Le premier ministre voit l'arbre.

The Prime Minister sees the tree.

b. Le premier ministre voit quoi?

What does the Prime Minister see?

c. Que voit le premier ministre?

What does the Prime Minister see?

d. *Que le premier ministre voit-il?

The contrast between c. and d. in (40) and (41) reveals one aspect of the problem: *qui* permits (requires) only complex inversion while *que* permits (requires) only STYL-INV. This fact has been frequently noted in the contemporary literature (Langacker, 1965; Hirschbühler, 1969; Huddleston and Uren, 1969; Langacker, 1971; Kayne, 1972) but no one has offered a solution which integrates these

¹⁰(40 c.) is grammatical as "Who sees Jack?" but not as "Who does Jack see?"

distributional facts with process statements of transformations.

One means of avoiding (40 c.) and (41 d.) is to use an inserted *est-ce que*, or what appears to be an *est-ce que*, after the sentence initial WH word. This insertion precludes inversion, as shown in (40 c') and (41 d').

(40 c') Qui est-ce que Jacques voit?

Who does Jack see?

(41 d') Qu'est-ce que le premier ministre voit?

What does the Prime Minister see?

Sentences like these two introduce a new set of problems relating to the specification of subject and object. The initial WH word maintains the human - nonhuman bifurcation and they are both questioning *the object*. The subject can only be questioned in this type of structure by replacing the *que* of *est-ce que* by *qui*:

(42) Qui est-ce *qui* voit le chien?

Who sees the dog?

(43) Qu'est-ce *qui* voit le chien?

What sees the dog?

Relative pronouns behave in the same way. Subjects are relativized as *qui* and objects as *que*. This parallel would indicate that (40 c') and (41 d'), (42) and (43) contain relative clauses preceded by WH + *est-ce*. This analysis cannot be correct in spite of Langacker's assertion (1965) and hopes (1971) to the contrary. There are no semantic grounds for distinguishing (44) from (45).

(44) Qui vient?

Who is coming?

(45) Qui est-ce qui vient?

Who is coming?

Native speakers do not view these sentences as displaying any meaning difference whatever. Any differences are felt to be stylistic and related to sociological factors more than to linguistic content. If (45) in fact contained a relative clause, the sentence would presumably be derived from a cleft sentence and would therefore be distinct from (44). Whatever the source of clefts, they are distinct from non-cleft sentences in that they place emphasis on different constituents. Since (44) and (45) do not reflect a cleft -- noncleft dichotomy, a cleft origin of (45) is mistaken.

The sentences (46) and (47) are identical in meaning and the presence of *est-ce que* or of *est-ce + que* (rel.) does not add emphasis or any other discernable feature to (47) which is not present in (46).

(46) Que voit Jean?

What does John see?

(47) Qu'est-ce que Jean voit?

What does John see?

This fact argues against a derivational source for *est-ce que* in (47).

The grammar of French will therefore have to specify that interrogative object words must rewrite as *qui* or *que* depending upon their human status.¹¹ Furthermore, the grammar must state that when WH movement applies the interrogative word must appear in sentence

¹¹Bonnard (1961) provides an excellent resume and cross classification of the detail of these facts.

initial position and that the final member of the /ɛsk(ə)/ construction alternates between /k(ə)/ and /ki/ according to the function of the entire sequence. When there is a questioned NP, a functional (case) distinction is made between subject /...ki/ and object /...kə/. When the function is neutral, as in YNQ, even if the *WH* word derives from a source other than subject or object NP, the /...kə/ form is used.

A schematic representation of this distributional information is given in (48).

(48)	<i>WH</i> word <u>subj./obj.</u>	interrogative <u>morpheme</u>
	(human) qui	est-ce qui (subject)
	(nonhuman) que	est-ce que (object)
	quand, où, pourquoi	est-ce que (neutral)

There are, then, the following possibilities:¹²

- (49) a. qui est-ce que (vous voyez?)

Who (do you see?)

- b. qu' est-ce que (vous voyez?)

What (do you see?)

- c. qui est-ce qui (vous voit?)

Who (sees you?)

- d. qu' est-ce qui (vous voit?)

What (sees you?)

- (50) a. quand est-ce que (vous chantez?)

When (do you sing?)

¹²This list is illustrative, not exhaustive. There are other *WH* words such as *lequel* and *comment* which take the neutral *est-ce que*.

b. où est-ce que (vous chantez?)

Where (do you sing?)

c. pourquoi est-ce que (vous chantez?)

Why (do you sing?)

d. *quand est-ce qui (vous chantez?)

e. *où est-ce qui (vous chantez?)

f. *pourquoi est-ce qui (vous chantez?)

Since *est-ce que* and *est-ce qui* alternate in this way and since neither one is analyzable, French has two *est-ce que* type morphemes /ɛsk(ə)/ and /ɛski/, which appear according to whether or not the sentence initial *WH* derives from an underlying object or subject. Since these phonological sequences apparently have nothing whatever to do with cleft meaning, all the complex machinery required for the derivation is superfluous. Langacker (1971) argues that all of the transformations required for a cleft derivation of *est-ce que et al* are motivated independently (the Free Ride Principle--FRP). However, if the description is distorted by taking advantage of the FRP, then the FRP has little positive value in this instance.

Still another complication is introduced by contrasting sentences (51) and (52).

(51) a. Qui court?

Who is running?

b. Qui est-ce qui court?

Who is running?

(52) a. *Que court?

What is running?

b. Qu'est-ce qui court?

What is running?

While (51 a) is grammatical with only an initial *WH* word, the analogous structure for a (questioned) non-human subject in (52 a) is not. Non-human subjects obligatorily require the presence of /ɛski/ as the interrogative morpheme. This too, is an isolated condition and cannot be related to any other features of French. The grammar will have to acknowledge this fact by inserting /ɛski/ into *all* sequences of

<i>WH</i>
non-human
subject

 + verb. The insertion is either optional when the *WH*-subject-word is [+ human] or depends upon non-semantic features of style.

6.7 Quel questions

Some indication of a final type of *WH* question in French was given in section 6.4 in the discussion of questions like (34).

(34) Il part à quelle heure?

He leaves at what time (o'clock)?

These are the *quel* questions. They have a variety of forms: they are inflected for gender and number and they have compound forms which can undergo phonological modification characteristic of articles.

The *quel* words always agree in gender and number with a noun:

(53) a. Quel livre lisez-vous?

Which book are you reading?

b. Quelle voiture préférez-vous?

Which car do you prefer?

c. Quels enfants viennent?

Which children come?

d. Quelles oranges a-t-elle choisies?

Which oranges did she choose?

In this respect they parallel the behavior of adjectives:

(54) a. Je lis le livre vert.

I am reading the green book.

b. Je préfère la nouvelle voiture.

I prefer the new car.

c. Les petits enfants viennent.

The little children are coming.

d. Elle a choisi les belles oranges.

She chose the beautiful oranges.

The compound forms of *quel* are made of initial segments resembling definite articles, and *quel*. Both parts of the compound forms are inflected for gender and number:

(55) a. Lequel lisez-vous?

Which one are you reading?

b. Laquelle préférez-vous?

Which one do you like best?

c. Lesquels (d'entre eux) viennent?

Which ones (of them) are coming?

d. Lesquelles a-t-elle choisies?

Which ones did she choose?

The compound forms undergo modification of their first segments when juxtaposed to *de* and *à*. The modifications are the

same as for *à* and *de* plus articles, namely:

a + le	→ au	de + le	→ du
a + les	→ aux	de + les	→ des

Examples with *lequel* are:

(56) a. Auquel d'entre vous s'est-on adressé?

Which one of you was spoken to?

b. De laquelle avez vous besoin?

Which one do you need?

c. Auxquels pensiez-vous?

Which ones were you thinking about?

d. Desquelles vous servez-vous?

Which ones are you using?

Given the facts that *quel* behaves like adjectives and that *lequel* shares behavior with articles, it is reasonable to assume that *quel* questions derive from the determiner system of NPs. It is not clear how the underlying elements ought to be ordered. Given the data in (57), it appears that whenever both the article and *quel* are present, there can be no noun.

(57) a. Lequel préférez-vous?

Which one do you prefer?

b. *Lequel livre préférez-vous?

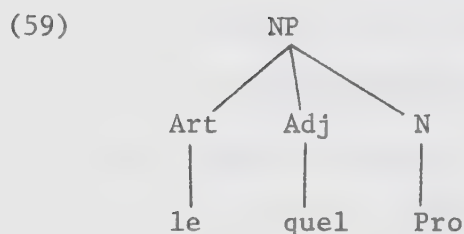
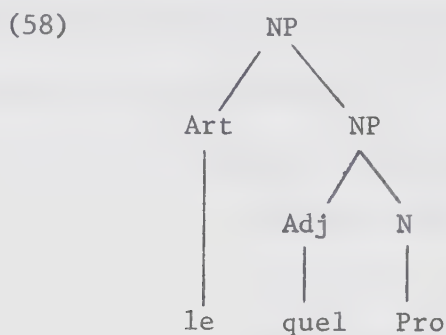
c. Quel livre préférez-vous?

Which book do you prefer?

d. *Quel préférez-vous?

That is, *lequel* functions as a nominal but *quel* functions as an

adjective. It can be hypothesized that this is due to the reduction of the sequence DET - ADJ - NP to DET + ADJ by a process of determiner attachment to an adjective. That is, it may be that a PM like (58) is changed to (59).



Since the Pro-form filling N cannot surface, the only possible resulting status of *le + quel* is NP. The nominal *lequel* functions as either subject or object:

(60) a. *Lequel est le bon?*

Which one is the right one?

b. *Lequel voyez-vous?*

Which one do you see?

Both of these possibilities are allowed under the article attachment hypothesis.

On the other hand *quel* questions may be derived by deletion of *Art* when *WH* precedes an N filled by a noun. These suggestions are purely speculative and considerable additional attention must be given to this problem.

What is clear however, is that all *quel* questions interrogate some part of the determiner system governing nouns and that one or another of the determiner nodes is marked to contain a *WH* morpheme. The sentences in (61) illustrate the possible syntactic configurations for *quel* questions.

(61) a. Vous avez quel livre?

You have which book?

b. Quel livre avez-vous?

Which book do you have?

c. Quel livre est-ce que vous avez?

Which book do you have?

d. Vous avez lequel?

You have which one?

e. Lequel avez-vous?

Which one do you have?

f. Lequel est-ce que vous avez?

Which one do you have?

These sentences show that whenever *WH* movement applies either inversion or *est-ce que* insertion must also apply. *Quel* questions, then behave in every way like all other *WH* questions.

6.8 Conclusion

The *est-ce que* and *WH* word structures lead the linguist to the following dilemma. His methodology requires that his description derive from observations of systematic alternations (paraphrases). The statements of these alternations are called the description

or grammar of the corpus. French WHQ form a highly integrated system. WHQ which undergo *WH* movement have two interrogative markers in their surface structures: 1) the *WH* word; and, 2) a syntactic device (inversion, *est-ce que* insertion). Analysis of *est-ce que*, YNQ and WHQ as containing *est-ce que* shows that there are more ad hoc insertions and alternations than have generally been attributed to French. This may result from the fact that the methodological procedures are based upon unwarranted assumptions about the general, 'universal' and integrated nature of linguistic data. Misdirected attempts to derive /ɛsk(ə)/ and /ɛski/ from complex embeddings and underlying cleft sentences are the result of the rigidity of the methodology and do not reflect an isomorphic correlation of the language structure as perceived by native speakers in conscious reports. Until linguists and others have developed techniques for evaluating the internalized competence or knowledge of a speaker, discussions about whether one ad hoc description is preferable over another are premature.

Attempts to reach levels of explanatory adequacy (Chomsky 1965:25) without due respect to intervening descriptive adequacy (Chomsky 1965:24) are doomed to fail. One of the conditions on descriptive adequacy is that it implies correct statements about native speakers' intuitions. The attempts at analyzing *est-ce que* as a cleft, for example, blatantly ignore native speakers' assertions that the sequence is an empty phonological string whose only role is to label the sentence as an interrogative. The zealous appeal to generality and independently motivated transformations (systematic

correspondances) is merely an artifact of the methodology and should be discarded when it distorts the data, however complex and disjoint the resulting descriptive statements may be.

CHAPTER VII

CONCLUSIONS

	<u>Page</u>
7.0 Conclusions and implications	269
7.1 Future directions	274

CHAPTER VII

CONCLUSIONS

7.0 Conclusions and implications

Chapter I presented a brief discussion of arguments for constraining the operations of transformations so that they do not change the meaning associated with a particular structure. On the basis of permutation, insertion and deletion transformations it was held that a meaning preservation constraint (the KPC) was well motivated. Chomsky (1971) however, has presented several arguments against such a constraint and in favor of a descriptive system which derives at least some elements of meaning from surface structures.

Some of Chomsky's arguments are refutable on syntactic grounds: there are alternate means of describing some of his examples within the KPC. At least one of his arguments (*only* distribution) is refuted by counterexamples. The interpretivist arguments imply a lack of relation between underlying (intended) meaning and surface (realized) meaning for at least some semantic features. If some elements of meaning are superficial it could be argued that those aspects of meaning attributed to underlying structures are artifacts of the analysis and that *all* meaning is specified at the surface. This claim would essentially destroy the value of structural analysis based on the comparison of sentence structures which are interpreted as having similar meanings. Any "systematic" alternations of

meaning associated with "systematic" alternations of structural configurations would be assigned at the surface level and there would be no need for underlying structures of any kind.

The implication of both of these versions of the surfacist position is that speakers do not have control over the expressive units with which they communicate. Given this undesirable implication of Chomsky's position and the fact that some of his arguments are refuted, it is not clear whether the KPC ought to be maintained on a general level or not. However, an analysis of French interrogatives shows that it is possible to construct descriptive statements within the bounds of the KPC.

If the KPC is accepted as one element of the basic orientation for transformational analysis, some means of differentiating sentence types is necessary. Questions exhibit consistent oppositions of meaning to declaratives (and imperatives). It is shown in Chapter II that an underlying question morpheme *Q* attached to the beginning of a sentence can serve the purpose of representing this distinction. The *Q* can also serve as a trigger for the operation of the transformations responsible for producing the particular syntactic configurations of questions.

Interrogatives in English and French can be differentiated as yes/no questions (YNQ) and WH questions (WHQ). Katz and Postal (1964) propose that this distinction be made by attaching a *WH* morpheme to the underlying structures of WHQ but not to YNQ. However, there are different types of WHQ. It is therefore necessary to attach the *WH* to some particular node in the underlying structure so

that "Who bought a book?" and "What did John buy?" are separated consistently.

Langacker (1969, 1971) argued that *Q* be replaced by an abstract performative verb *ASK* indexed in such a way that the system of indices would replace the *WH*. In Chapter III it was shown that performatives are unmotivated and ill-defined structures. There is evidence to indicate that extralinguistic information is relevant to the functioning of linguistic operations but the same evidence indicates that abstract sentences as currently conceived are inadequately defined to serve the purpose.

An index system is rejected in Chapter III where it is shown that embedded interrogatives as defined by Baker (1970) are analyzable as relative clauses. This rejection does not eliminate the necessity for maintaining a *WH* morpheme to distinguish between subtypes of *WHQ*. In any event, given the lack of motivation for *ASK* and the rejection of indices (for questions), the Langacker and Baker proposals are discarded as being functionally equivalent to the *Q + WH* analysis and therefore not providing any information not previously associated with *Q + WH*.

French intonation questions (IQ) were examined in Chapter IV. The only overt indication of the interrogative status of such questions is rising intonation. While it is possible to delineate IQ as a subcategory of interrogative structures it is not yet possible to state what question intonation is. Zwanenburg (1965) has shown that there is no single intonation pattern which is consistently or exclusively associated with IQ. Delattre (1970) has further shown

that the intersection of intonation patterns and syntactic patterns is significant in representing particular meanings. These observations indicate the relevance of multiple linguistic signalling systems in surface structure. This conclusion is consistent with the idea that all aspects of meaning are present in underlying structures: both syntactic configuration and intonation factors are sensitive to particular meaning features and can be manipulated so as to represent various nuances of meaning, intention, and so on, in a specified communicative context.

Other findings in connection with intonation accent the need for increased precision in evaluating and comparing intonation patterns. Both Langacker (1971) and Hirschbühler (1970) have proposed derivations for intonation questions which violate the acoustic facts of the intonation patterns involved (cf. Delattre 1969).

French inversion questions (Chapter V) can be divided into two general types: simple inversions and complex inversions. Inversions can also be separated according to whether a subject clitic or a subject noun phrase is inverted (Kayne 1972). Of these subtypes only complex inversions pose significant problems of analysis. Within the confines of the KPC, two sources of complex inversions are required. Focused complex inversions represent the semantic effect of focusing devices in general. It was proposed that focused complex inversions derive through reduplication (a general focusing process) and clitic inversion. Unfocused inversions are to be derived through insertion of a clitic in postverbal subject position when a *Q* and an unfocused NP are present. The

insertion process maintains marked features for gender (and number) and inserts *iĭ* when gender and number are unmarked.

This solution to complex inversion makes the necessary distinction between focused and unfocused NPs. The advantage of a dual source is that it concisely accounts for a number of distributional complexities of reduplicated versus inverted clitics. Therefore, not only is it possible to deal with these structures with the KPC, it is desirable to do so.

A relatively concrete and straightforward analysis of *est-ce que* and WHQ is made possible by the KPC. Langacker (1965) and others have assumed that *est-ce que* questions are derived from the clefting device *c'est que*. However, as shown in Chapter VI, there are both syntactic and semantic arguments against this. The morpheme *est-ce que* never occurs in any other phonological form than /ɛsk(ə)/: there are no tense changes, no permutations and no insertions possible without changing the meaning. When such processes do occur the value of the changed sequence is always that associated with clefting, a value absent from the interrogative marker *est-ce que*. The conclusion is that *est-ce que* is a single morphological unit.

WHQ pose some slight complications in that they require *est-ce que* to appear as *est-ce qui* when the subject of the sentence is questioned (i.e. when *WH* is attached to the subject). There is therefore an alternation between *que* and *qui* as the final member of *est-ce que*. The alternation is predictable and is produced in response to specific factors internal to the linguistic structure. Once again the KPC allows a concise and accurate description of the

observable data and avoids ad hoc meaning neutralization procedures.

Other WHQ are derived when *WH* is attached to object, adverbs and determiner nodes. No difficulties are encountered by using the *Q + WH* proposal: WH words are formed and then shifted to sentence initial position.

Since the KPC and *Q + WH* not only allow a coherent description of French interrogatives but also encourage the incorporation of some very desirable features into the analysis, it can be concluded that both of these proposals are well-motivated. If at some other point either of these proposals is replaced by some other, the replacement will have to take the factors discussed here into account. Of these two proposals it is felt that the KPC is the more important since it affects the orientation of research and implies strong claims about the nature of language as an instrument of communication. The *WH* as a specifier of relationships is an artifact of the methodology involved in a descriptive system. It does not direct the orientation of the analysis but merely reports the results. Zwicky (1971) points out that when the KPC was first proposed it was a "methodological rule-of-thumb" but that it gradually acquired the status of "organizing hypothesis" or fundamental empirical hypothesis concerning the organization of linguistic structures.

7.1 Future directions

At several points in this work it has become evident that the gap which presently exists between linguistic grammars and more general grammars of usage hampers description. In Chapter III, it was shown that while performatives have attempted to bridge this gap

they are presently incapable of doing so. The proposed internal structure of abstract sentences presupposes a two participant (speaker-addressee) orientation of linguistic messages. Hymes (1972) has shown this to be an inadequate orientation. Performative verbs also fail to reflect the fact that syntactic operations typically related to one underlying meaning can also appear in sentences representing a different meaning. This latter failing is not restricted to performatives. It is a property shared by all analyses which purport to uniquely associate particular syntactic operations with a single typical meaning or set of meanings. Such analyses do not reflect the communicative context in which a given sentence is produced. As was shown in Chapter IV, it is not possible to associate an individual intonation pattern with an individual syntactic pattern. Furthermore, syntactic patterns and intonation patterns intermesh so that the "usual" meanings associated with each of them are changed.

A related issue was noted in Chapter V. Although cleft sentences like "C'est lui qui m'a ouvert la porte," place focus on the subject, a cleft sentence like "C'est le curé qui va rire!," emphasizes the predicate. Thus while there are regularities in the distribution of linguistic units these regularities are not necessarily open to interpretation independently of the semantic value inherent in each of the lexical items.

The consequence of these observations is that there is no unique connection between syntactic configurations and underlying meaning. Such a conclusion is not an argument in defence of surface structure modifications to meaning. It has been shown here that a

well-motivated analysis of French interrogatives is possible without recourse to surface insertions of meaningful elements. If it is assumed that the linguistic grammar has access to a broader base of input information and that the semantic input is the intended message of the speaker, then it should not be surprising that the communicative tools at the disposal of the speaker can be manipulated so as to convey that message via superficial structures. To claim that there are changes in the meaning of a sentence at the derived structure level is to deny that a speaker has control over his utterances.

In order to better understand these problems and the interaction of communicative context, intended message and linguistic signals each of these areas will have to be explored in more depth. The overt linguistic data to which we have access are manifestations of the intersection of each of these areas. Continued formalization of the distributional features of the syntactic signalling systems independently of more general considerations of the function of language may well be a misdirected activity. It will be the study of the intersections and interdependencies of various facets of language which will lead the way to a fuller understanding of the functioning of language as a tool of communication.

BIBLIOGRAPHY

- Akmajian, Adrian. 1970. On deriving cleft sentences from pseudo-cleft sentences. *Linguistic Inquiry* 1.149-168.
- Anderson, Stephen. 1970. On the linguistic status of the performative/constative distinction. In Report No. NSF-26 *Mathematical Linguistics and automatic translation: to the National Science Foundation*. The Aiken Computation Laboratory, Harvard University, Cambridge, Massachusetts. Section I.
- Austin, J. L. 1962. *How to do things with words*. Cambridge, Massachusetts. Harvard University Press.
- Bach, Emmon. 1968. Nouns and noun phrases. *Universals in Linguistic Theory*, by E. Bach and R. T. Harms (eds.), 90-122. New York: Holt, Rinehart and Winston.
- Bach, Emmon. 1971. Questions. *Linguistic Inquiry*. 2.153-166.
- Bailey, C-J. N. 1970. A New Intonation Theory to account for Pan-English and Idiom-Particular Patterns. *Papers in Linguistics*. 2.522-604.
- Baker, Carl LeRoy. 1970. Notes on the description of English questions: the role of an abstract question morpheme. *Foundations of Language*. 6.197-219.
- Benveniste, Emile. 1957. La Phrase relative, problème de syntaxe générale. *Bulletin de la société de linguistique de Paris*. 53.39-54.
- Bonnard, Henri. 1961. Le systeme des pronoms *qui*, *que*, *quoi* en français. *Le Francais Moderne*. 29.241.
- Bouton, Lawrence F. 1970. Do so: do + adverb. In J. Sadock and A. Vanek (eds.). 17-38.
- Bright, William. 1968. Toward a cultural grammar. *Indian Linguistics*. 29.20-29.
- Casagrande, Jean and B. Saciuk. 1972. *Generative Studies in Romance Languages*. Rowley, Massachusetts: Newbury House.
- Chambers, John. *Focused noun phrases in English syntax*. Unpublished Ph.D. Dissertation. University of Alberta.
- Chomsky, Noam. 1957. *Syntactic Structures*. The Hague: Mouton & Company.

- Chomsky, Noam. 1962. A Transformational Approach to Syntax in A. A. Hill (ed.) *Proceedings of the Third Texas Conference on Problems of Linguistic Analysis of English*, 1958. Austin, Texas, The University of Texas. 124-158. Reprinted in Fodor & Katz (eds.) *The Structure of Language*. 211-245.
- Chomsky, Noam. 1964. *Current Issues in Linguistic Theory*. The Hague: Mouton.
- Chomsky, Noam. 1965. *Aspects of the theory of syntax*. Cambridge, Massachusetts: M.I.T. Press.
- Chomsky, Noam. 1971. Deep structure, surface structure and semantic interpretation. In L. Jakobovits and D. Steinberg (eds.). 183-216.
- Cook, E.-D. 1968. *Embedding transformations in Korean syntax*. Unpublished Ph.D. dissertation, University of Alberta.
- Creore, JoAnne. (to appear) French phonology and morphology revisited. *Canadian Journal of Romance Linguistics*.
- Delattre, Pierre. 1939. Accent de mot et accent de groupe. *The French Review*. 13.1-6.
- Delattre, Pierre. 1952. *Principes de phonétique française à l'usage des étudiants anglo-américains*. Middlebury College, Middlebury, Vermont.
- Delattre, Pierre. 1966. Les dix intonations de base du français. *The French Review*. 40.1-14.
- Delattre, Pierre. 1967. La nuance de sens par l'intonation. *French Review*. 41.326-327.
- Delattre, Pierre. 1969. L'intonation pas les oppositions. *Le Français dans le monde*. 64.6-13.
- Delattre, Pierre. 1970. Syntax and intonation, a study in disagreement. *Modern Language Journal*. 54.3-9.
- Fillmore, C. F. and D. T. Langendoen. 1971. *Studies in linguistic semantics*. New York: Holt, Rinehart and Winston.
- Fodor, Jerry A. 1970. Three reasons for not deriving 'kill' from 'cause to die.' *Linguistic Inquiry*. 1.429-438.
- Fouché, Pierre. 1959. *Traité de Prononciation Française*. Paris: Librairie C. Klincksieck.

- Foulet, Lucien. 1921. Comment ont évolué les formes de l'interrogation. *Romania*. 47.243-348.
- Fraser, Bruce. 1970a. A Reply to 'On Declarative Sentences' in Report No. NSF-24 *Mathematical Linguistics and Automatic Translation* to The National Science Foundation, Susumu Kuno, Principal Investigator, Cambridge, Massachusetts.
- Fraser, Bruce. 1970b. Idioms within a transformational grammar. *Foundations of Language*. 6.22-42.
- Fromaigeat, E. 1938. Les formes de l'interrogation en français moderne. *Vox Romanica*. 3.1-47.
- Gallagher, Mary. 1970. Does meaning grow on trees? *Studies presented to Robert B. Lees by his students*. Jerrold M. Sadock and Anthony L. Vanek (eds.). Linguistic Research Inc., Edmonton, Alberta. 79-94.
- Garner, Richard. 1971. Presupposition in philosophy and linguistics. In C. J. Fillmore and D. T. Langendoen (eds.). 23-42.
- Greenberg, Joseph H. 1966. Some universals of grammar with particular reference to the order of meaningful units. *Universals of Language*, ed. by Joseph H. Greenberg, 73-113. Cambridge, Massachusetts: M.I.T. Press.
- Grévisse, Maurice. 1959. *Le bon usage*. Paris Librairie orientaliste Paul Geunther, 12 Rue Vavin, Paris (VI^e).
- Grundstrom, A. W. 1971. Review of *Contemporary French Interrogative Structures*, by R. Terry. *Canadian Journal of Linguistics*. 16.154-156.
- Gumperz, J. J. and D. Hymes (eds.). 1972. *Directions in sociolinguistics: the ethnography of communication*. New York: Holt, Rinehart and Winston.
- Harris, Zellig S. 1957. Co-occurrence and Transformation. *Language*. 33.283-340. Reprinted in Fodor and Katz (eds.) *The Structure of Language*. 155-210. Reprinted in Z. S. Harris *Papers in Structural and Transformational Linguistics*.
- Hirschbühler, Paul. 1970. *Traitement transformationnel de l'interrogation et de quelques problèmes connexes en français*. Dissertation, Université Libre de Bruxelles.
- Hirschbühler, Paul. 1971. Contribution à une étude transformationnelle de l'interrogation en français. *Le Langage et l'homme*. 16.28-35.

- Huddleston, Rodney and Ormond Uren. 1969. Declarative, interrogative and imperative in French. *Lingua*. 22.1-26.
- Hymes, Dell. 1972. Models of the interaction of language and social life. In J. J. Gumperz and D. Hyme (eds.).
- Jakobovits, L. A. and D. D. Steinberg (eds.). 1971. *Semantics: an interdisciplinary reader in philosophy, linguistics and psychology*. Cambridge: Cambridge University Press.
- Katz, J. J. and Paul M. Postal. 1964. *An Integrated Theory of Linguistic Descriptions*. Research Monograph No. 26, M.I.T. Research Laboratory of Electronics. Cambridge, Massachusetts: M.I.T. Press.
- Kayne, Richard S. 1971. A Pronominalization paradox in French. *Linguistic Inquiry*. 2.237-241.
- Kayne, Richard S. 1972. Subject Inversion in French Interrogatives. In J. Casagrande and B. Saciuk (eds.). (Page references are to the revised manuscript version).
- Klima, Edward S. 1964. Relatedness between grammatical systems. *Language* 40.1-20. Reprinted in D. A. Reibel and S. A. Schane (eds.) *Modern Studies in English*, 227-246.
- Koutsoudas, Andreas. 1968. On wh-words in English. *Journal of Linguistics*. 4.267-273.
- Kuroda, S-Y. 1969. Attachment Transformations. In D. Reibel and S. Schane (eds.) *Modern Studies in English*.
- Labov, William. 1970. *The Study of Nonstandard English*. National Council of Teachers of English. Champaign, Illinois.
- Lakoff, George. 1970. *Irregularity in Syntax*. New York: Holt, Rinehart and Winston.
- Lakoff, George. 1971. The role of deduction in grammar. In C. J. Fillmore and D. T. Langendoen (eds.), 63-70.
- Lakoff, Robin T. 1969. Some reasons why there can't be any *some-any* rule. *Language*. 45.608-615.
- Lakoff, Robin T. 1970. Tense and its relation to participants. *Language*. 46.838-849.

- Lampach, Stanley. 1965. *The Grammars of English and French*. Center for Applied Linguistics, Washington, D.C.
- Langacker, Ronald W. 1965. French Interrogatives: a transformational description. *Language*. 41.587-600.
- Langacker, Ronald W. 1966. *A Transformational syntax of French*. Unpublished Ph.D. Dissertation, University of Illinois.
- Langacker, Ronald W. 1969a. On Pronominalization and the Chain of command. In Reibel & Schane (eds.), *Modern Studies in English*, 160-186.
- Langacker, Ronald W. 1969b. *An Analysis of English Questions*. Unpublished preliminary draft, University of California, San Diego.
- Langacker, Ronald W. 1970. English question intonation. In J. Sadock and A. Vanek (eds.), 139-161.
- Langacker, Ronald W. 1971. French interrogatives revisited. In J. Casagrande and B. Saciuk (eds.) (1972). (References are to the pre-publication version).
- Le Bidois, Georges et Robert. 1968. *Syntaxe du français moderne*. Paris. Editions Auguste Picard. Paris.
- Leech, Geoffrey N. 1968. Some assumptions in the metatheory of linguistics. *Linguistics*. 39.87-102.
- Lees, Robert B. 1960. A Multiply ambiguous adjectival construction in English. *Language*. 36.207-221.
- Léon, P. R. 1971. Ou en sont les études sur l'intonation? Communication présentée au VIIe Congrès International de Phonétique de Montréal, août 1971. (A Paraître dans les Actes du Congrès, Mouton, La Haye, 1972).
- Martinet, André. 1964. *Elements of General Linguistics*. English translation by Elisabeth Palmer. London: Faber & Faber Limited.
- Matthews, Peter. 1972. Review of R. A. Jacobs and P. S. Rosenbaum (eds.), *Readings in English Transformational Grammar*. *Journal of Linguistics*. 8.125-136.
- McCawley, James D. 1970. English as a VSO language. *Language*. 46.286-299.
- Morgan, Jerry L. 1969. On arguing about semantics. *Papers in Linguistics*. 1.49-70.

- Partee, Barbara Hall. 1971. On the requirement that transformations preserve meaning. In C. J. Fillmore and D. T. Langendoen (eds.), 1-21.
- Prideaux, Gary D. 1970. The Selection Problem. *Papers in Linguistics*. 2.238-266.
- Prideaux, Gary D. 1971. On the notion 'linguistically significant generalization.' *Lingua*. 26.337-347.
- Ross, John R. 1967. *Constraints on variables in syntax*. Unpublished Ph.D. Dissertation, M.I.T. (Page references are to the version circulated by the Indiana University Linguistics Club.)
- Ross, John R. 1971. On declarative sentences. In *Readings in transformational grammar*. Edited by Peter S. Rosenbaum and Roderick A. Jacobs, 222-272. New York: Ginn-Blaisdell.
- Roulet, Eddy. 1969. *Syntaxe de la proposition nucléaire en français parlé*. Bruxelles, Association internationale pour la recherche et la diffusion des méthodes audio-visuelles et structuro-globales. (AIMAV). Collections d'études linguistiques.
- Sadock, Jerrold. 1969a. Super-hypersentences. *Papers in Linguistics*. 1.1-15.
- Sadock, Jerrold. 1969b. Hypersentences. *Papers in Linguistics*. 1.283-370.
- Sadock, J. and A. Vanek (eds.). 1970. *Studies presented to Robert B. Lees by his students*. Linguistic Research, Inc., Edmonton and Champaign.
- Sampson, Gloria 1969. *Social Systems and Lexical Features: Pronominal Usage in the Canterbury Tales*. Unpublished Ph.D. Thesis. The University of Michigan.
- Sanders, Gerald A. 1967. *Some general grammatical processes in English*. Unpublished Ph.D. dissertation. Indiana University, Bloomington, Ind. Reproduced by the Indiana University Linguistics Club, June 1968.
- Stockwell, Robert P. 1960. The place of intonation in a generative grammar of English. *Language*. 36.360-367.
- Swadesh, Morris. 1946. Chitimacha. In *Linguistic structures of native America*. Viking Fund Publications in Anthropology Number Six. New York: Johnson Reprint Corporation.

- Terry, Robert M. 1970. *Contemporary French Interrogative Structures*. Montreal: Editions Cosmos.
- Thompson, Sandra Annear. 1971. The deep structure of relative clauses. In C. J. Fillmore and D. T. Langendoen (eds.) (1972), 79-94. Also appeared in *Working Papers in Linguistics*. 6.41-58. The Ohio State University.
- UESP. 1968. University of California, Los Angeles, English Syntax Project: integration of transformational theories on English syntax (R. P. Stockwell, et al.). Command Systems Division, United States Air Force, Bedford, Massachusetts.
- Ultan, Russell, 1969. Some general characteristics of interrogative systems. *Working papers on language universals*. 1.41-63a.
- Valdman, Albert. 1967. Norme pédagogique: les structures interrogatives du français. *International Review of Applied Linguistics (IRAL)*. 5.3-10.
- Zwanenburg, W. 1965. *Recherches sur la prosodie de la phrase française*. Universitaire Pers, Leiden.
- Zwicky, Arnold. 1970. The Free-Ride Principle and two Rules of Complete Assimilation in English. *Papers From the Sixth Regional Meeting, Chicago Linguistic Society*. Chicago Linguistic Society, Chicago.
- Zwicky, Arnold. 1971. Linguistics as chemistry: the substance theory of semantic primes. *Working Papers in Linguistics*. 8.112-135. The Ohio State University, Columbus, Ohio.

B30042